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The hardware, the vision, the future:
how **Oculus Rift** changes everything



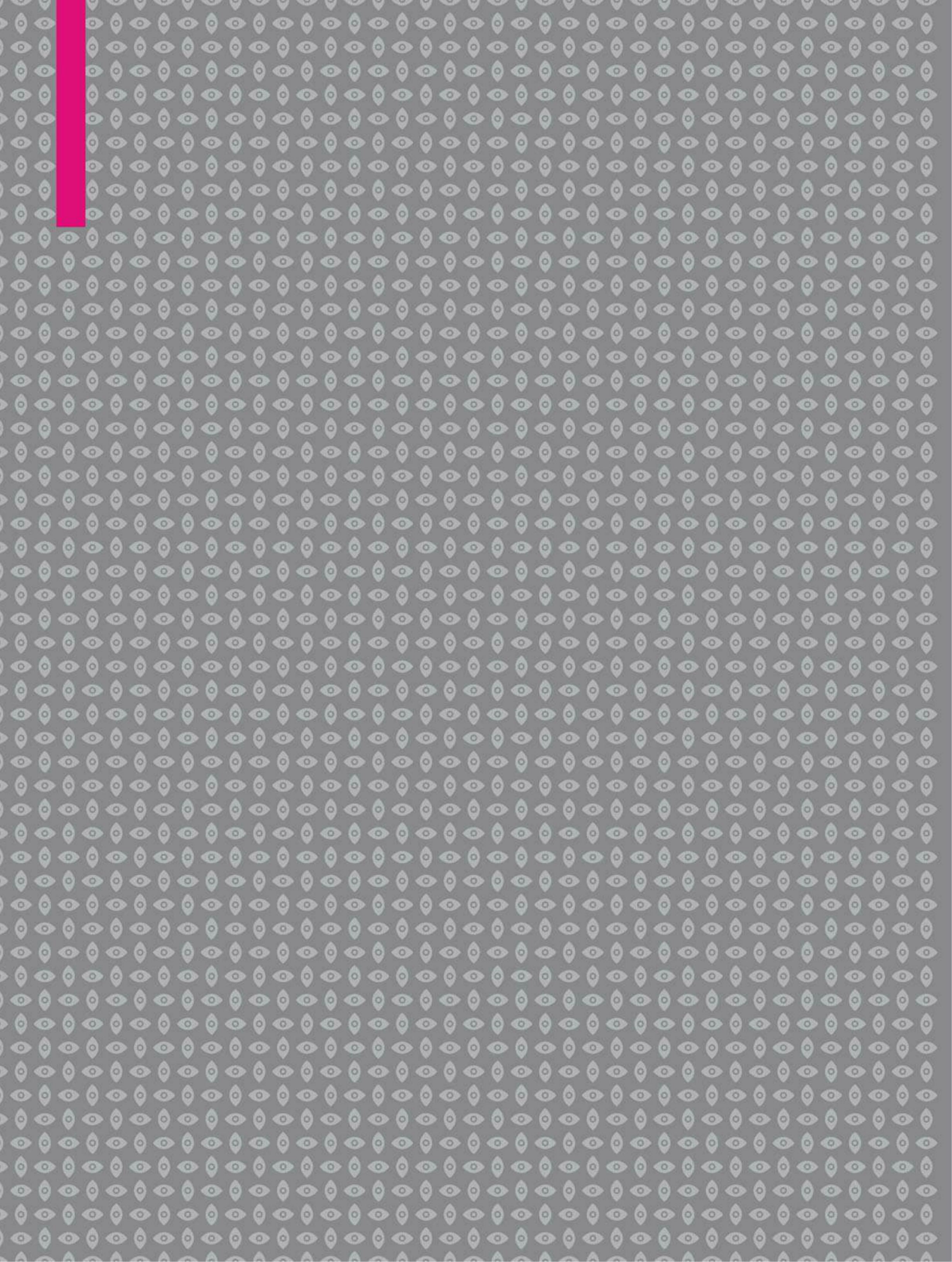
REVIEWS

METRO: LAST LIGHT
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#254

JUNE 2013

WII U
WHAT
WENT
WRONG?

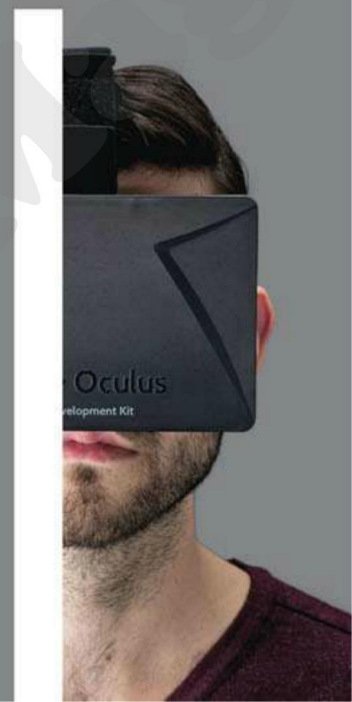


Virtual reality is back – and this time it really works

“Salute, cybernauts. You have made it to the Cyberzone. Pass through these gates with me and together we will cross the reality datum.” Those of you with long memories – and exposure to terrestrial UK television in 1993 – may recall these words, as spoken by Craig Charles to introduce Cyberzone, a game show that attempted to cash in on the buzz that surrounded the emergence of virtual reality. Featuring game challenges powered by 486 PCs sputtering out flat-shaded 3D environments at flick-book frame rates, the core action of Cyberzone was about as convincing as its host’s patter, and yet there remained something mesmerising about it. Compared to what we were accustomed to expect from videogames, virtual reality carried a sense of exoticism. The act of playing – consisting of participant, controller and screen – had hardly changed since the very beginning, and head-mounted displays promised to be transformative. Famously, it was a promise on which the technology of the time failed to deliver, and the concept was pushed to one side, possibly to be revisited another day, possibly not. Not many people seemed to care either way.

And then, 20 years on, id Software’s John Carmack rolled up at E3 touting a device that made us pay attention all over again. Affordable, lightweight and easy to incorporate in concert with existing 3D engines, the hardware, Oculus VR’s Rift headset, had much to recommend it – even if in prototype form it had a lashed-together quality that is rarely associated with technology offering the power to effect so much change.

Those who got the opportunity to try Oculus Rift at E3 came away convinced that its designer, Palmer Luckey, was on to something. A wildly successful Kickstarter campaign proved that the wider world shared the enthusiasm. We’ve since spent time with the latest iteration of the hardware, and in this edition we talk to the Oculus VR team about its hopes for the future. Join us as we, erm, cross the reality datum on p74.



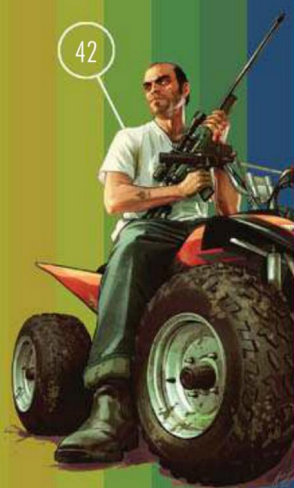
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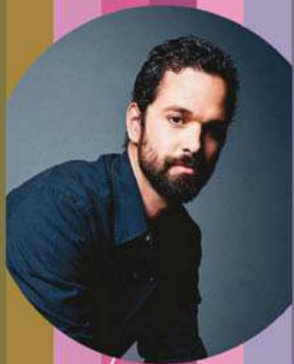
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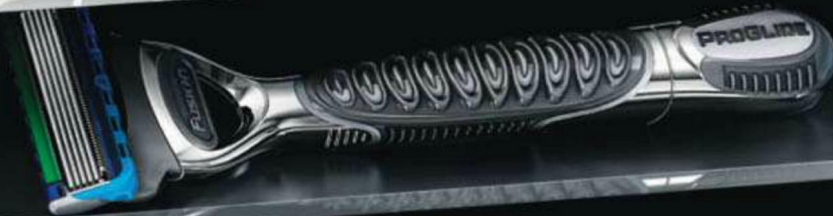
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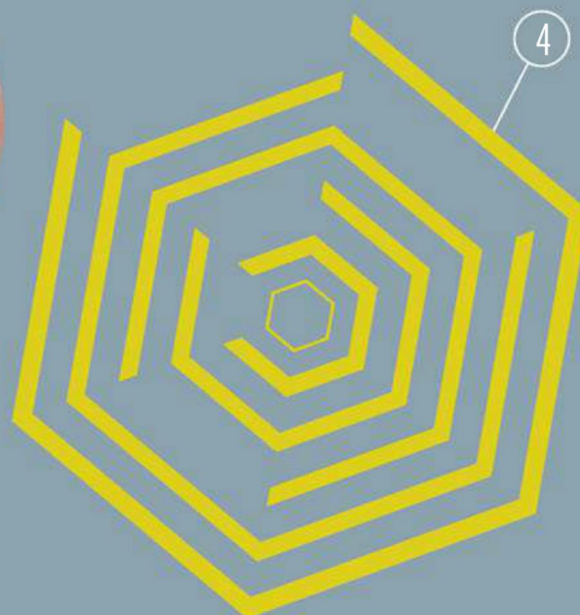
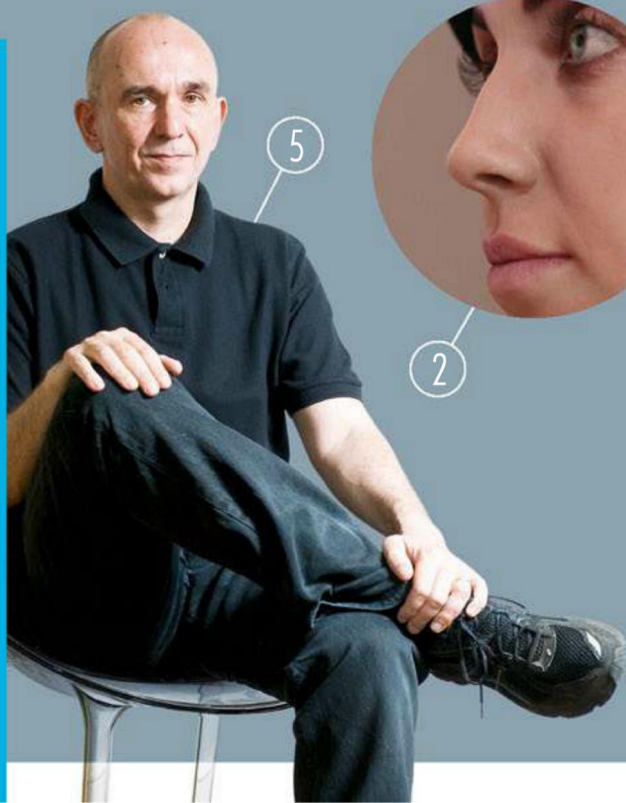
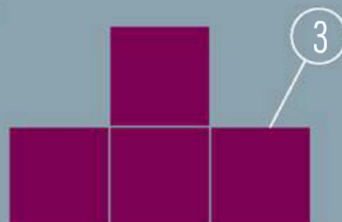
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WLEDGE

After a decent Christmas launch, Nintendo's Wii U ^① has fast reached the point where it's selling fewer units month on month than Xbox 360 and PlayStation 3. After Wii's runaway success – and titanic profits – it's quite the fall from grace, but what's really going wrong and what can Nintendo do to fix it? As thirdparty support for the hardware continues to dwindle, we take a closer look at the issue on p10. On a more positive note, Nvidia and Activision have both shown off astonishing facial animation software ^② that could do wonders for fostering human connections with game characters. We look at the tech, and how it can be scaled down enough to run in realtime on modern PCs, on p14. Then on p16, EA shows us how it's applying free-to-play techniques to one of gaming's most cherished creations to make *Tetris Blitz* ^③. And while *Tetris*'s original leaderboards remain sacrosanct, what of the current generation of online score tables dominated by hackers' unlikely 'achievements'? We look into whether indie devs ^④ have the experience and will to protect their scoreboards on p18. Soundbytes on p22 ^⑤ has Peter Molyneux's own wisdom on F2P gaming, as well as baiting words from Phil Fish. Finally, in My Favourite Game on p24, Alt-J drummer Thom Green ^⑥ talks to us about providing crowd noises for *PGA Tour 2015* and his early battles against 8bit title *Alex Kidd*.



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Up-to-the-minute
game news and views

How can Nintendo turn Wii U around?

Facing poor sales, flagging thirdparty support and few games on the way, only Nintendo can alter the fate of its struggling console

Shigeru Miyamoto has requested patience. Speaking with CNN in early April, he urged consumers to give Wii U a chance, to give Nintendo an opportunity to communicate the usefulness of the console's second screen and to look forward to the games coming in late 2013. But with low sales in every territory for Nintendo's latest console, Christmas may be too late.

Wii U's figures tell an unprecedented story. Nintendo has shifted 3.45 million Wii Us worldwide, with only 390,000 of those sold in 2013. While Nintendo stays tight-lipped on exact monthly sales figures, estimates from NPD Group data state that Wii U sold around 57,000 units in January and 64–75,000 in February in the US, a long way short



Nintendo's global president and new US CEO, Satoru Iwata

of 360's 302,000 and PS3's 263,000 in February alone. In fact, in no four-week period on record has 360 or PS3 sold as few units as Wii U at its lowest ebb.

While these numbers paint a dismal picture, the future looks darker still. Titles championed by Nintendo at the console's E3 debut have been delayed or ported to other platforms, and publishers that shared Nintendo's stage at Wii U's E3 announcement have drifted away. *Rayman Legends* has gone multiplatform, *Metro: Last Light* and *Aliens: Colonial Marines* have been cancelled for the console, none of EA's key 2013 titles – *Dead Space 3*, *Crysis 3* and *Battlefield 4* – are heading to Wii U, and both *Madden* and *FIFA* are running one year behind their PS3 and 360 counterparts.

"Imagine a shooter like *Battlefield*... brought to you on a Nintendo system with that breakthrough controller," said **John Riccitiello** at Nintendo's 2011 E3 conference. Two years on, and imagination is the closest anyone will get to a Wii U version of EA's FPS series.

"Nintendo always went against the grain," says EEDAR analyst **Jesse Divnich**. "It's risky for publishers to jump on revolutionary technology from day one and this puts tremendous pressure on the firstparty studios to lead the charge. With Wii U, a few key firstparty titles were delayed, and without them consumers are still on the fence about the console."

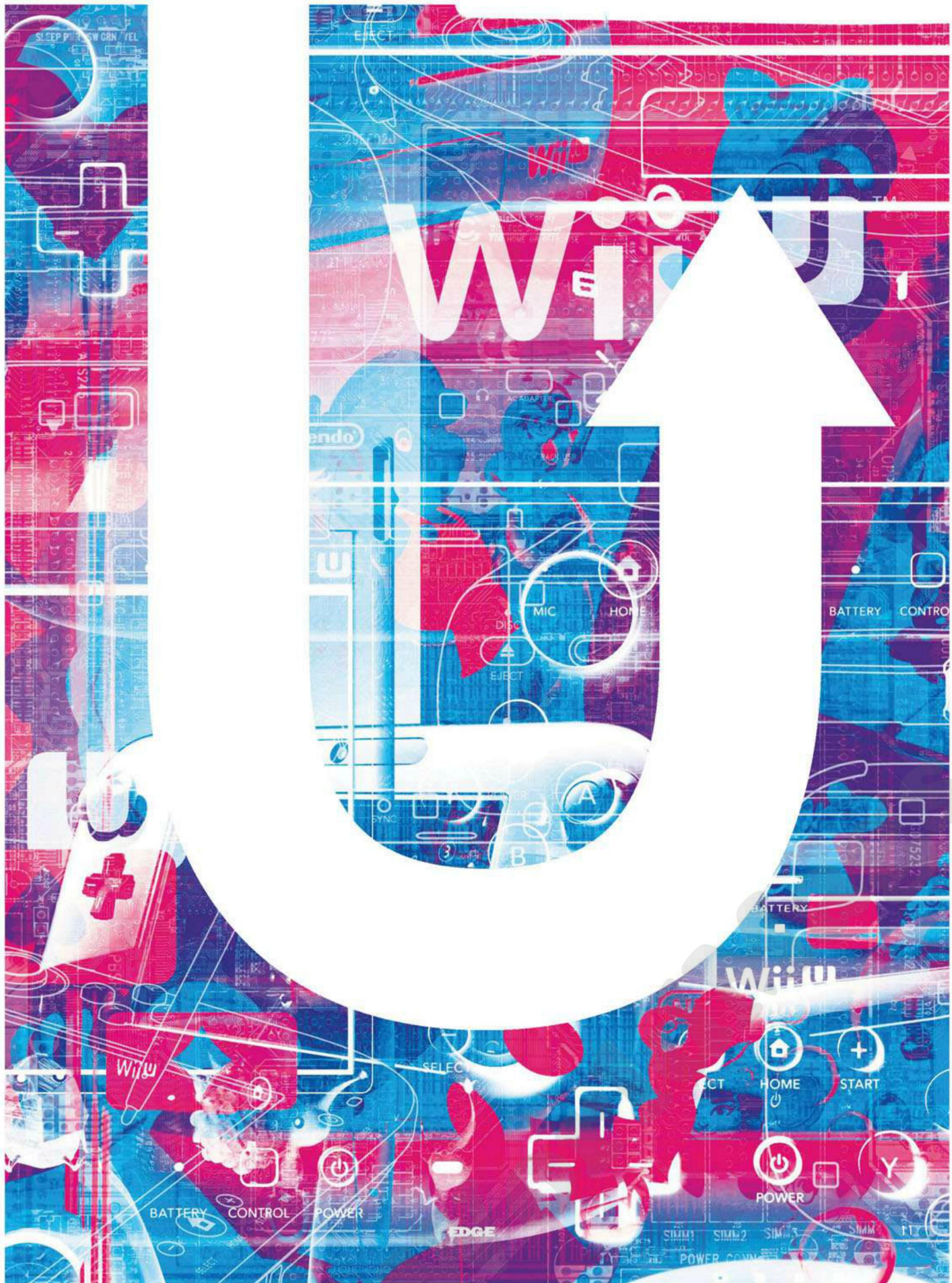
"Third parties won't say this on the record, but many have confided in me that they are sceptical about Wii U," says Wedbush Morgan analyst **Michael Pachter**. "The control scheme is very DS-like, the graphics are comparable to current-generation consoles, and the price point is relatively high. Although Nintendo did a commendable job with launch support, the lack of support from big publishers – *Battlefield 4* and *GTAV*, for example – speaks volumes."

The clock is ticking on Wii U and the platform's success now depends on the power of Nintendo's firstparty titles to revive its fortunes. *Mario Kart*, *Zelda*, *Super Smash Bros* and *Mario* games have been announced, but with no release date. *Pikmin 3*, *Bayonetta 2*, *The Wonderful 101* and an untitled Yoshi platformer have been shown off, but also have no date attached to them.

"I suppose the right question is why they didn't have more firstparty titles available



Nintendo had been banking on *Pikmin 3* to carry Wii U through the lean launch period, but delays have pushed the game deep into the year and the brand is aimed squarely at Nintendo loyalists, not the broad audience the console is so keenly trying to attract



THIRDPARTY SUPPORT

Alongside Ubisoft, Warner Bros and Activision are backing Wii U with current-generation ports of some of their biggest games. Every other major publisher is, however, conspicuous by their absence, and there are excuses: "[Wii U] is something that I think we would want to tailor the experience to if we were going to do it," explained *Tomb Raider* creative director **Noah Hughes** to TrueGaming.

"One of the strongest appeals of the Wii U is the GamePad," Kojima Productions' **Fuji Korekado** told Eurogamer. "However, we've constructed *Metal Gear Rising* so you can fully enjoy the game on the controllers, whether it's on the PS3 or the Xbox. So currently we aren't thinking about *Metal Gear Rising* on the Wii U."

"We did have *Crysis 3* running on the Wii U," Crytek's **Cevat Yerli** told Venture Beat. "We were very close to launching it, but there was a lack of business support between Nintendo and EA on that."

For a console so intentionally aimed at core players, these absences are worrying.

at launch," says Pachter. "And the answer is likely that they didn't plan very well."

E3 will no doubt give shape to some firstparty games – Nintendo still intends to hold a press event, despite shunning the big stage – but the company's attempt to court hardcore players failed long before the launch of Wii U. The barrage of 'core' games for Wii in 2010 was a clear shift in direction. As far back as 2008, Nintendo had set about securing the rights to *Monster Hunter*, guaranteeing Wii's ongoing success in Japan, and the 2010/11 years saw it finance and publish *Metroid: Other M*, *Pandora's Tower*, *The Last Story* and *Xenoblade Chronicles* at extraordinary expense. All three were costly and underperformed, particularly in the west.

It was with that new 'no gamer left behind' strategy that Nintendo announced Wii U. A new *Smash Bros*, *Lego City: Undercover*, and a selection of minigames destined for *Nintendo Land* were announced alongside *Darksiders II*, *Aliens*, *Assassin's Creed III* and *Batman: Arkham City*. Those same thirdparty games were championed with much the same footage 12 months later, and again the signals were mixed. Ubisoft's *Killer Freaks From Outer Space* had become *ZombiU*, *Pikmin 3* was a clear play for Nintendo's most dedicated fans, and *Nintendo Land* would be the new console's *Wii Sports*.

"I think Nintendo thought that Wii U would appeal to everyone the way the Wii did," says Pachter. "But I don't think the GamePad is as friendly as the Wii Remote for people who aren't familiar with consoles, so I've always been sceptical about mass-market penetration."

The problem with Wii U's GamePad isn't that it's tricky to explain, it's that it needs explaining in the first place. Nintendo's 2012 E3 conference was almost exclusively about detailing the benefits of asymmetrical play. Compare *Wii Sports* and *Nintendo Land* and you have a clear picture of each console's approach; one is simple and intuitive, while the other is complex and not remarkably good at any one thing.

Come Wii U's launch, early media coverage focused on the lengthy system



Monster Hunter 3 Ultimate helped boost Wii U sales in the UK, but the thinking behind it is part of the platform's problem. Nintendo has helped the console's chances in the east by courting powerful brands such as *Dragon Quest* and *Monster Hunter* but has no comparable games aimed at the western market

update and bricked consoles, but it's easy to overstate the effect of those reports. In fact, Wii U shifted 3.06 million units worldwide in its first month, and early adopters were eager to spend on their new systems. The console boasted 11.69 million game sales – 3.82 games per console sold – led by *Nintendo Land* and *New Super Mario Bros. U*.

Those first-month sales, it seems, can be attributed to the Nintendo loyalists. "I think that the biggest reason for the decline is a lack of compelling firstparty software," says Pachter.

"Nintendo have not supported the Wii U with any of their best-known brands and I expect sales will increase when we see a *Mario* or *Zelda* title. But if sales don't pick up, third parties will be reluctant to support the Wii U, and if third parties don't support it, the Wii U is unlikely to see a rebound in sales. It's a vicious circle."

After three months of poor results, the final week of March saw Wii U sales increase by 125 per cent in the UK, with credit shared between *Monster Hunter 3 Ultimate*'s release and HMV's £100 price cut for the Premium hardware bundle. HMV's experiment proved Wii U's

viability were it to be sold at a lower RRP and backed with quality games. The market has deemed Wii U a more desirable prospect at £200 than £300, but when it's already the first Nintendo console to be sold at a loss, can the company shoulder such a dramatic cut?

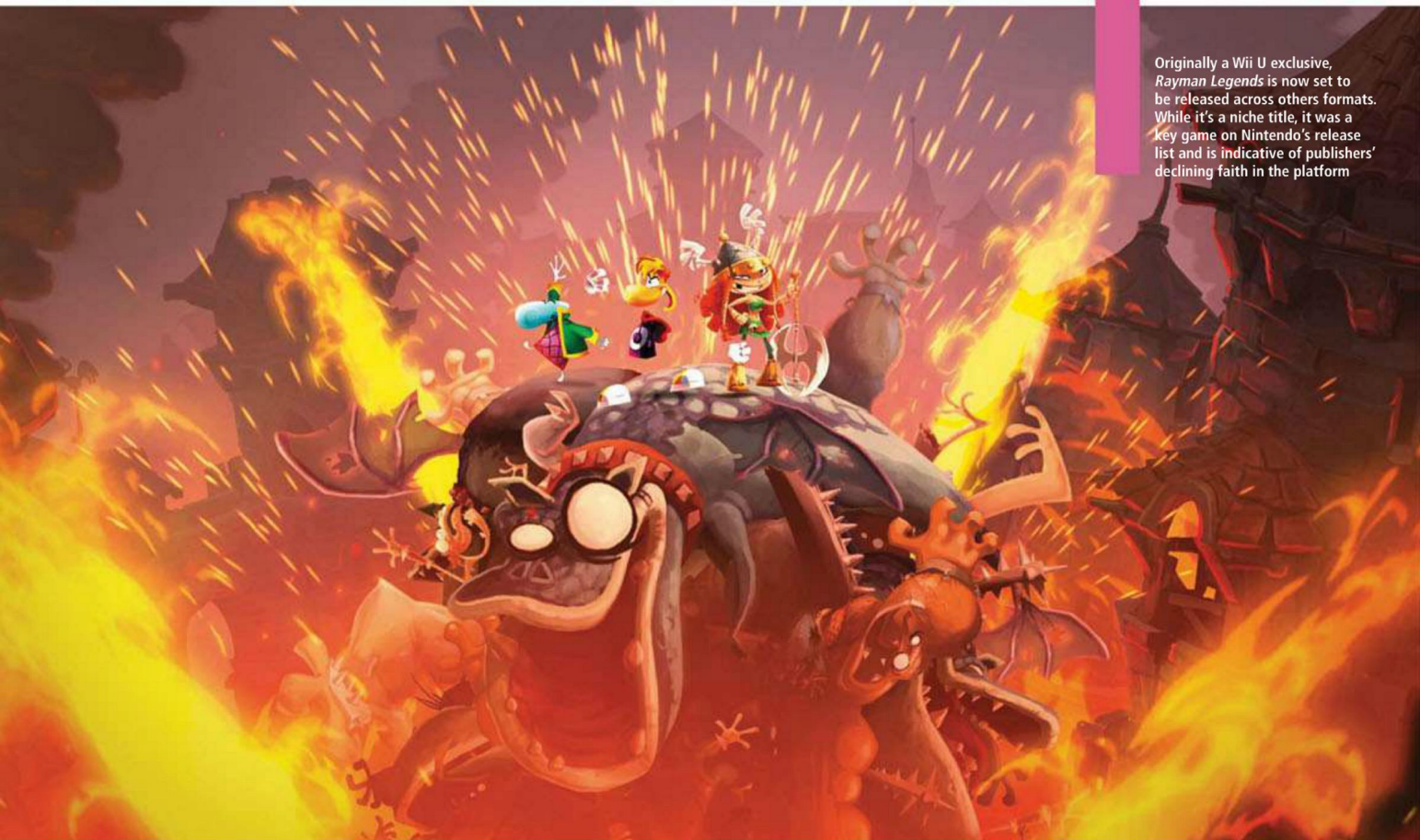
Over in Japan at around the same time, the Wii U version of *Dragon Quest X* sold just 36,000 copies and boosted weekly sales of the console to 21,000 from the previous week's 10,000.

These are miserable figures for the *Dragon Quest* series – traditionally one of Japan's favourite titles – and for Wii U, which is outsold every week by Sony's floundering Vita. But that at least is, in a way, a meaningful defeat for Nintendo. Vita's ability

to recover a full year after its Japanese debut offers hope for Wii U, and while Vita is still being outsold two to one by 3DS, it's a remarkable turnaround from the lows in 2012 where 3DS maintained a six-to-one lead. Vita's recovery can be attributed to a hefty price cut (down from ¥29,980 for the 3G model to ¥19,980) and a selection of locally appealing games. In the UK, 3DS pulled a similar

"I think that the biggest reason for the [sales] decline is a lack of compelling firstparty software"

Originally a Wii U exclusive, *Rayman Legends* is now set to be released across others formats. While it's a niche title, it was a key game on Nintendo's release list and is indicative of publishers' declining faith in the platform

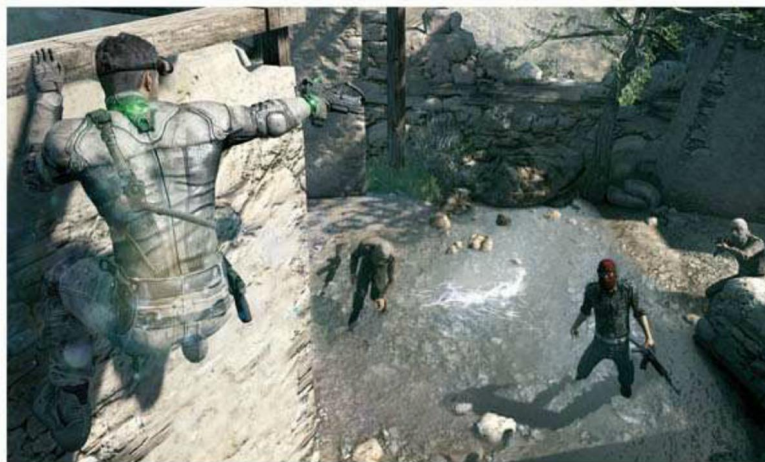


trick in late 2011 after its price was cut by a third in July and then the double hit of *Super Mario 3D Land* and *Mario Kart 7* drove sales months later.

"Nintendo has yet to release its major firstparty titles on the [Wii U] platform," says Divnich. "Consumers are waiting for that killer Wii U game before making their decision on whether or not to enter the ecosystem. Right now, the battle in the living room is for the second-screen experience and Nintendo is positioned perfectly to capitalise on this trend. I think it may be fair to give Nintendo through the holiday to see if the current lineup can raise awareness and sales."

Pachter doesn't agree: "I'm not sure Nintendo can profitably turn Wii U around. They can certainly sell a lot more if they cut the price dramatically, but that might be too costly to justify. They can pay for thirdparty software exclusives, but that may also be too costly. Of course, they can accelerate development of firstparty software. But a console launching now should have been competitive with the next-generation machines from Sony and Microsoft, and this one isn't."

Nintendo will struggle to meet the nine million Wii U sales it has projected for 2013, and the decision to skip its E3 conference in favour of smaller Nintendo



Ubisoft and Warner Bros are among the few thirdparty publishers still backing Wii U, with titles such as *Splinter Cell: Blacklist* and *Arkham Origins* both scheduled for release across all formats later this year

Direct-style regional addresses only compounds the problem, since they target the converted, rather than the mass market. Nintendo is rightly proud of its heritage in the console business, but its ageing licensing policies and online strategies have failed, and mistakes made towards the end of Wii's life have held back Wii U. Patience is Nintendo's last resort until *Zelda*, *Mario*, *Metroid* and perhaps some new IPs in the style of *Wii Fit* can turn sales around. Widespread thirdparty support seems unlikely, but if nobody else will support the platform then

Nintendo will have to do what only it can and sell the console entirely on its firstparty games.

Nintendo has survived several console generations and two different handhelds by building upon the foundations laid by its firstparty studios and favoured contractors, and Wii U looks to be no different. The question, then, is whether Wii U will be more an N64 or a DS, more a GameCube or a Wii, more a platform for the true believers or a console that can become every living room's second screen of choice. ■

Videogaming's changing faces

Activision and Nvidia show off **photoreal tech demos** that aim to do more than just wow

Tech demos can often seem immune to the constraints of reality. You eagerly feast your eyes upon the promise, but then have to wait many years for hardware to catch up to software in a commercially viable way.

This is especially true of facial animation and its ongoing bid to cross the uncanny valley, a feat requiring flawless conditions for lighting, skin shading, performance capture, and all the rendering resources money can buy. The movie industry enjoys these, while the game industry does not, so it's little wonder that David Cage and Hideo Kojima – both known for holding filmic values in high esteem – are behind two such tech demos that attempt to bridge the valley.

March gave us two more, derived from a single set of performance data from the Institute for Creative Technologies (ICT) at the University Of Southern California. In two stage presentations at Nvidia's GPU Technology Conference and the Game Developers Conference respectively, Nvidia and Activision introduced us to Digital Ira, a gurning but photorealistic severed head captured by ICT's Light Stage apparatus. Rendered using different methods – Nvidia's showcasing its mighty GTX Titan GPU, Activision's more modest in using a GTX 680 – both saw Ira perform the same mo-capped skit with incredible shading and animation.

But to what end? Will gaming benefit from this technology in the foreseeable future, or is this just a rare chance to impress from an industry suffering diminishing graphical returns?

"We believe that pursuing realistic human interaction is a very genuine



Brian Horton is the senior art director at Crystal Dynamics

THE SKIN WE'RE IN

What does an art director working closely with faces think about demos like these? "I think they're very valuable," says Crystal Dynamics art director Brian Horton. "R&D projects are the tip of the spear when it comes to things we're going to be seeing further down the line. If people are looking at these demos and expecting that next-gen is going to have characters all looking like this, it might be a little bit of an over-promise. But when I look at *Battlefield 4*, they're getting something that's approximate."

direction," insists **Mark Daly**, Nvidia's vice president of content creation.

"Our most important, most meaningful, and most memorable interactions are with other people face to face. Unfortunately, our Dawn 2.0 demo [an Audrey Hepburn-esque fairy looking all kinds of thrilled about a flower she's just found] landed deep in the uncanny valley. We have screenshots where our character looks beautiful, but the more we tried to push her performance to be more interesting, the more animatronic and creepy she became.

"It's harder to impress an audience today than it was 15 years ago. When we released our first GeForce we were able to wow audiences by rotating a fire truck as it reflected a spherical environment with a fixed-function shader that executed about 16 instructions per pixel. We easily draw 500 of those fire trucks today, but does it have 500 times the impact or tell 500 times the story? We have to pursue technologies that will engage us as people."

With the Titan card far exceeding the raw graphics performance of next-gen consoles, Nvidia's Ira renders and animates with "over 4.9 trillion floating-point operations per second, and we still have a way to go before we get it right," Daly admits.

ICT is no stranger to this kind of demo or technology. Its Light Stage 2.0, a sphere of lights and cameras able to capture detailed facial reflectance and performance, was introduced to movies by Sony Pictures Imageworks in 2002,

helping to create CGI stunt doubles for Spider-Man 2. It later stunned attendees of SIGGRAPH 2008 with Digital Emily, fooling many with its double of actress Emily O'Brien.

Emily remains the more compelling demo even now, but Ira's significance for games is compression; Nvidia's FaceWorks method crunches 32GB of source data into just 300MB, which is digestible by modern graphics cards. "The trick is to take advantage of similarities in the textures for each of the actor's expressions. Each texture is divided into an eight-by-eight grid of tiles, and those tiles that are recognised

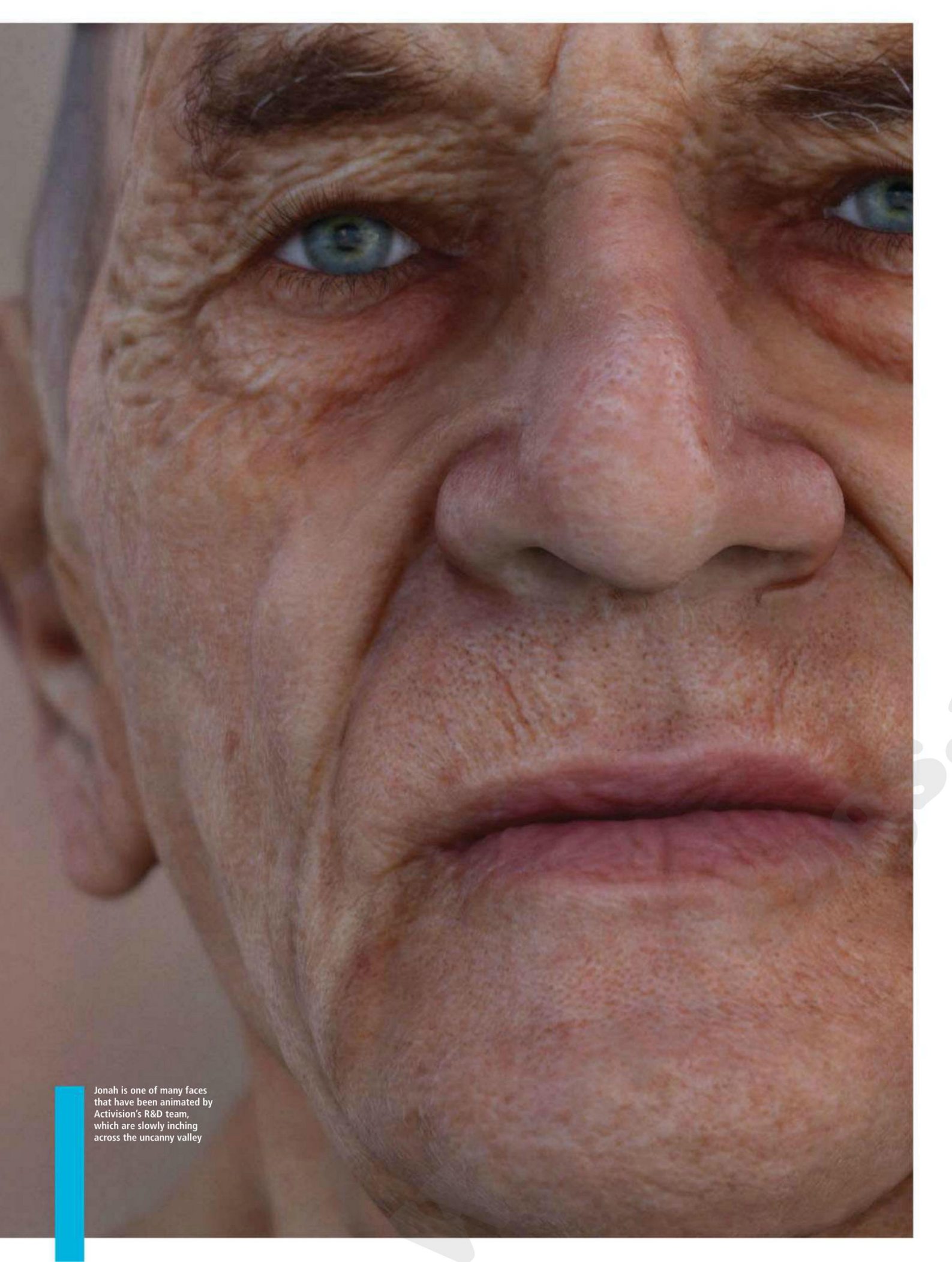
as being nearly identical to the same tile in other expressions are discarded," states the company's blog.

Specs from graphics R&D programmer Jorge Jimenez's blog claim Activision's technology is intended to bring "current generation characters to

life at 180fps in a GeForce GTX 680," but it will take a game to prove how practical the tech is in action.

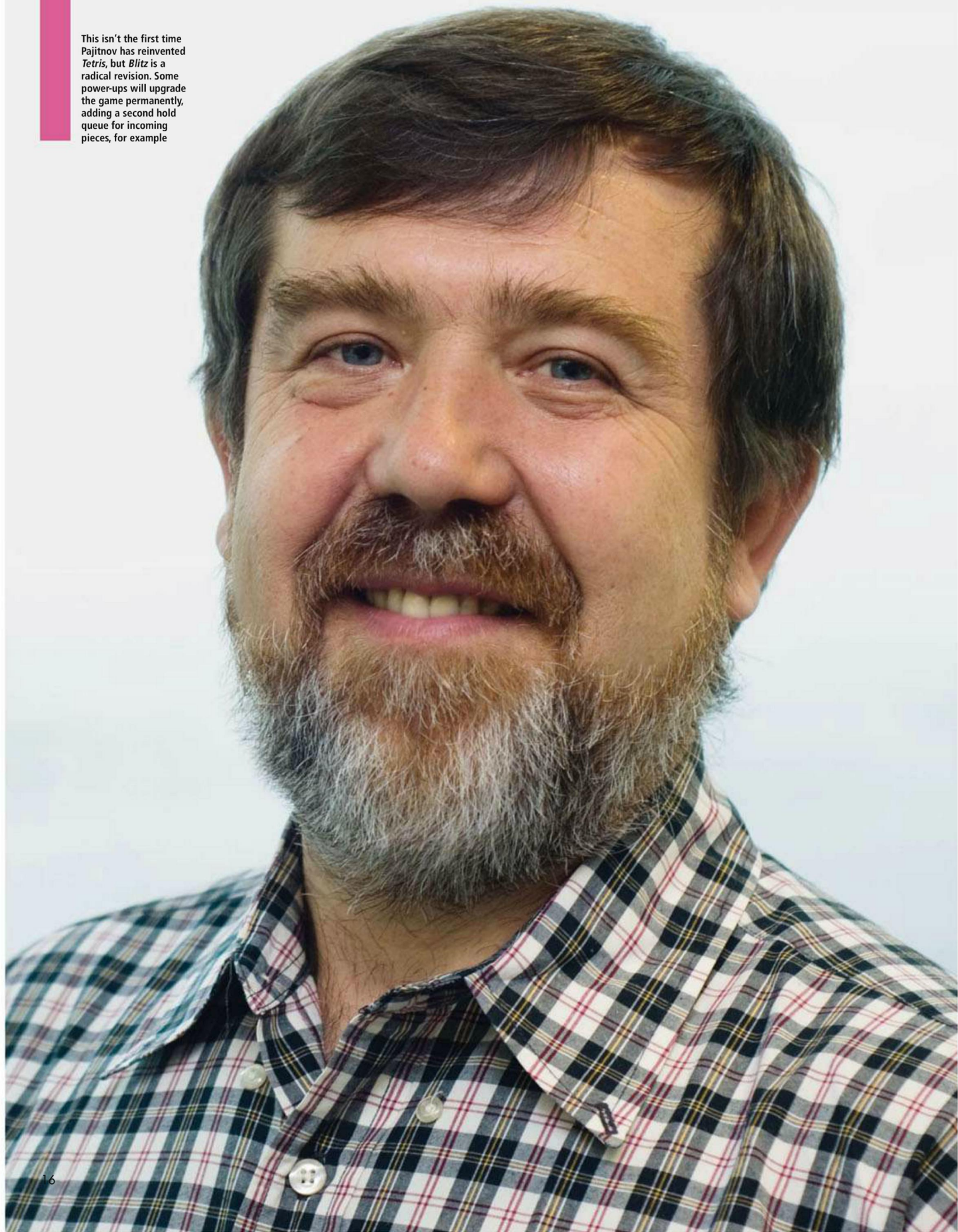
The problem is that crossing the uncanny valley takes a leap, while gaming can only take steps. But even if we succeed, Daly doesn't want standardisation. "Just because we can do more realistic humans doesn't mean we should lose the artistic stylisation that goes into some titles. Techniques like subsurface scattering might not be useful for a game without humans, but another technique like our tile-based texture optimisations or HDR depth-of-field with bokeh could still apply." ■

The problem is that crossing the uncanny valley takes a leap while gaming can only take steps



Jonah is one of many faces that have been animated by Activision's R&D team, which are slowly inching across the uncanny valley

This isn't the first time Pajitnov has reinvented *Tetris*, but *Blitz* is a radical revision. Some power-ups will upgrade the game permanently, adding a second hold queue for incoming pieces, for example



Pay-as-you-go Tetris

Can EA Salt Lake successfully refashion Alexey Pajitnov's 29-year-old puzzle classic for the time-poor player?

Tetris Blitz is the latest attempt to pull apart the elegant rules of the seminal Russian puzzle game and rearrange them in search of fresh novelty, this time to give the game a version tailored for iOS and Android. **Alexey Pajitnov**, the original's designer, has been in consultation with EA Salt Lake to ensure the essence of *Tetris* is protected. Nevertheless, it's tempting to balk at this recasting of one of the medium's greats in the fashions of the day. *Tetris* is going freemium, will have Facebook integration, and is set to be stuffed with purchasable power-ups, with play regulated by a set time limit.

"The original *Tetris* asked players the question, 'How long can you last?'" says *Tetris Blitz*'s executive producer **Jeff**

Peters. "But when you begin to improve at the game, you will last far longer than five minutes. *Tetris Blitz* is the answer to the question: 'What does *Tetris* look like when fitted for our contemporary lifestyle?'" In truth, he is referring not so much to a 'lifestyle' as to popular windows of play within the contemporary lifestyle: the daily commute, the five minutes of peace while the baby is dozing, the kind of short time frames where other *Blitz*-like titles (*Bejeweled Blitz*, *Candy Crush* and so on) have found a wide audience. Now you have just two minutes to play a game of *Tetris*, and it's impossible to fail.

Pajitnov: "The idea of a timed *Tetris* game really isn't new. *Tetris Ultra* [mode], which has the player racing against a two-minute timer to get the best score possible, has been around since at least as early as *Tetris DX*. *Tetris Blitz* certainly stands on its own as a brand-new variant

on the *Tetris* game, complete with power-ups and cascades, but it's not the first to introduce a fixed time limit." Even so, these changes appear fundamental. Is this a breaking of sacrosanct rules? Not if the new focus is on score attack, EA claims.

"The team is comprised of *Tetris* aficionados," says Peters. "We've ensured that player strategies from the original game are relevant and usable here, too, despite the shift of focus." Those strategies are encouraged and emphasised through what is likely to be *Tetris Blitz*'s most controversial addition: powerups. Players can install three of these boosters before a game, and they lend a huge variety of different buffs and benefits during play.

"There are players who have used the 'well strategy' for years, for example, where they build a single straight well in the middle of a tightly packed wall of blocks and finally slot a single column piece in there to clear four lines in a single move," explains Peters. The Magnet power-up encourages this strategy by taking all of your blocks and pushing them to one side, thereby giving you an instant well."

The team intends to add a new power-up to the game every week. "The hope is that we will turn *Tetris* into a sort of collectible card game," says Peters. "Players will need to figure out how new items can best work together."

But the danger with these power-ups is that they could upset the natural balance of the game, a particular worry when it's so firmly focused upon score-attack play and social competition (the game can plug into your Facebook friends list and offer them asynchronous challenges).



THE FAST SHOW
Tetris Blitz's emphasis is on speed and snap decision making. There's none of the frantic thumb tapping previously required to rotate a piece into the correct alignment for the slot you have picked out for it. Now all possible beneficial places for a piece are shown as white ghost outlines. You need only tap your chosen option and the piece will slam down at high speed. This removes the lightly dexterous challenge of the original game (which could be fussy when translated to a mobile phone screen) and places emphasis instead on mental strategy and planning.

"Power-ups are always a challenge to balance, because inherently power-ups are generally there to make things easier for you," Pajitnov says. "But it's not just a balance thing – it's an emotion thing, too. How do we design power-ups that are beneficial and balanced, that also have that 'Oh yeah!' moment to them?"

"Balancing has been the foremost design effort for the past ten months," says Peters. "We've broken the game multiple times, of course. There's a massive amount of complexity to keep it all balanced. But we've already seen strategies evolving."

Another fear for *Tetris*'s seasoned audience is the decision to turn *Blitz* into a freemium game. Pajitnov is unequivocal. "Ultimately, gamers will decide the fate of microtransactions as a whole by whether they play those games or not," he says. "With *Blitz*, nobody's being forced to make purchases. It is possible to play it without ever purchasing a single item."

Peters agrees, stating that the monetisation design works in tandem with the game design. "We have no energy mechanic," he says. "Each power-up has a coin cost, which you must pay for out of a single currency. As you play games, you earn this currency back. If you run out of coins, you can purchase more."

At the moment, EA Salt Lake's team members are maxing out their high scores at 1.3 million, but these are rising as players discover new strategies. The team has used the kind of metric analysis more usually found in social games, carefully mapping out scores and the time it takes a player to reach them, and balancing the curve accordingly. This sort of testing may be a sign of the times, but it reveals the challenge of trying to rebuild a classic within a set of market constraints. ■

Gamed Center

Those ridiculous hacked scores at the top of **iOS leaderboards**: who's responsible, and why?

The scenario that opens this piece won't come as news to anyone. One person on the Internet is flaming another person on the Internet. The web contains enough of this churning vitriol to burn with sun-like intensity forever. The difference from your typical flamewar, however, is that this person will never get a reply from the antagonist he's bending over his virtual knee: "DarkGamingLord, you are a pitiful human/human-mimicking vomit slug, and your desperate attempt at validating yourself is not only laughable, but also hilariously pathetic. It's nice that you killed another ten minutes of your obviously worthless time by figuring out how to max out the score on your games on Game Center."

This barrage of invective comes courtesy of a blog post entitled 'I'm Tired Of Cheating On Game Center', written last October by a fan of iOS gaming who blogs under the name Jesper. He'd been competing for high scores in *Fruit Ninja* and was frustrated that a whole crowd of people at the top of the game's leaderboard had registered identical scores of just over 9.2 quintillion (it's not a coincidence: that's the largest signed integer that can be stored within 64 bits of data). He picked out DarkGamingLord as the focus of his tirade because this particular player had crashed the party at the top of a number of high-profile leaderboards, including an assortment of *Angry Birds* titles.

Score hacking isn't a brand new phenomenon in iOS gaming. Rules and digital security measures, just like sporting records, are made to be broken after all. But, increasingly, leaderboards aren't just



Terry Cavanagh is the creator of iOS hit *Super Hexagon*

about bragging rights any more. Real-world eSport tournaments are pre-qualifying entrants at the top of online leaderboards, and the likes of Virgin Gaming are even looking to incentivise the top slots on games' high score tables. Yet the problem of regulating the leaderboards of iOS's biggest titles often falls to independent developers, whose talents lie in game design, not in building high-tech security architecture. We decided it was time to talk to both developers and the hacking community to see where things stand today.

DarkGamingLord is part of a community of hackers, called the CrackLords, who specialise in cracking iOS apps and making them available for free on jailbroken devices. Populating leaderboards with hacked scores is just part of the same hacking pastime, but with the additional lure of having your name displayed in lights for all Game Center users to see. The aim doesn't seem to be as much about cheating for these players as erecting a monument to their hacking exploits. Like a graffiti artist trying to find a lofty perch on which to tag her nickname for maximum visibility.

If you eavesdrop on the Twitter feed of Cosmicalninja, ringleader of the CrackLords, you'll find a conversation from early April between him and another hacker named Genitikfreak. The latter individual has received a threatening letter from a game developer who was less than happy to have their iOS game

hacked and claimed to be holding an arrest warrant. "I once had an email from the FBI asking me to hand myself in," boasts Cosmicalninja. "That's why they invented a trash folder." "Seriously?" Genitikfreak replies. "Yes seriously," Cosmicalninja assures him, "about 18 months back. Just ignore an email. An email means they can't find you. Wait for a subpoena."

No universal score leaderboard on Apple's Game Center is immune to the problem. Each and every one resembles an inbox with a hypothetical sort function that prioritises spam messages, raising them to the very top of the pile. But not every game developer is as peeved by the intrusion as the one who threatened to take legal action against Genitikfreak.

Super Hexagon, the popular reflex-testing action title by **Terry Cavanagh**, has its own share of bogus scores at the top of the leaderboard, but the game's creator can't understand why people would derive any satisfaction from doing so. He opted to forgo building in security measures, which means submitting a fake score is as easy as editing the save file and picking a number, any number.

"If it was really quite difficult to hack, then I could understand it," says Cavanagh. "But it is so easy that a kid could do it. Maybe [the person] wants to pose as an elite hacker, saying, 'Oh look what I was able to do,' but even to hackers that must look pretty pathetic, ⑤



Super Hexagon may be one of the most difficult action games in the App Store, but hacking its leaderboard couldn't be easier – simply edit your save file and type in a score of your choosing

because there is no protection in the game... If somebody wants to set a fake score on the leaderboard, it's just kind of an embarrassing thing for them, really. It's just so shameful; I feel like by deleting it I'm covering up just how awful they are."

Of course, when Cavanagh mentions deleting hacked scores, he isn't referring to Game Center, since Apple's service doesn't currently provide developers that functionality. Once a score is posted to a Game Center leaderboard, it's on there for good. Steam, on the other hand, does allow developers to remove scores, but Cavanagh points out that each one has to be removed individually and there might be 100 obviously hacked scores. Even if he did spend the time deleting them, people can just submit another fake score immediately, so what's the point?

Noodlecake Studios, the

developer behind *Super Stickman Golf 2*, believes in the primacy of the friend leaderboard, but it took things one step further and created a custom one inside the game, which appears before each course. Unless you exit the game and open up the Game Center app itself, you'll never see zkauth's cumulative score of 27,055 strokes under par for the easy difficulty course tier. The other consideration is the limited staff sizes of most iOS developers and the resources that can reasonably be allocated to bolstering security. Even an established studio like Noodlecake is a pretty lean operation.

"We did implement some security," says **Ryan Holowaty**, Noodlecake's head of business development and marketing, "but in the end some of the encryption stuff didn't pan out as well as we wanted it to and then kids just hacked the crap out of the game. Unless you hire those kids to do your security for you, there's really not much you can do about it."

Holowaty's not being flippant when he says kids, either. There's an informal poll on the iOS hacking forum iNinjas asking community members how old they are. Out of 63 respondents, 32.8 per cent claimed to be between 11 and 14 years of age.

"Unless you hire those kids to do your security for you, there's really not much you can do about it"



We approached a host of prominent individuals in the iOS hacking community – including DarkGamingLord – to request comments for this piece, and we grew accustomed to being ignored. Persistence paid off and we finally made contact with a user who had posted a prominent hacked score on one of the *Super*

Hexagon leaderboards. He asked not to be identified by name or Internet handle, so we'll just call him Rob.

Rob is a 14-year-old high-school student living in Canada. "I've been doing programming for about one-and-a-half years now," he tells us. Rob doesn't own a developer account. He has, however, released some tweaks in Cydia, the underground App Store for jailbroken iOS devices. One of the tweaks he developed but chose not to release is an altered version of Apple's GameKit framework, which enables games to submit scores to Game Center. His tweaked version reviews the submitted score information and replaces the score with the one you've previously established in the settings. Rob stresses that he simply developed it to see if it was possible, then removed it and "tossed the code in a corner of my hard drive".

One of the things that becomes clear in our interview with Rob is that he views hacking as a playground in which to test his programming expertise. "I don't cheat," he says. "All I do is research, really. One could compare it to fixing bugs in your program. When you've been trying to find a fix for an issue for days, it is extremely satisfying to be able to repair it."

It's not hard to figure out why the hacking impulse exists. Since their inception, games have been teaching players to study rulesets and look for exploits. It's not surprising, then, when a kid with an interest in programming takes this to a metagame level.

"Gamers who play *Skyrim* will occasionally do weird wall jumping up the side of a mountain where there's not a path and somehow get to the top," Noodlecake's Holowaty gives as a point of comparison. "It's that feeling of accomplishment, like, 'Oh, I don't think I'm supposed to be here', and they're all happy about it. I totally get that feeling."

Rob assures us that his *Super Hexagon* leaderboard entry is the only hacked score he's (accidentally) submitted, and he's not concerned about the prospect of being banned from Game Center. "I don't know if one could get banned for it," he shrugs. "I don't even think Apple cares, to be honest." ■

There are a variety of reasons people submit hacked scores, but a segment of them are simply young people experimenting with how games function by tweaking the existing code base

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Soundbytes

Game commentary in snack-sized mouthfuls



"If I departed from Epic every time **I said something dumb,** I wouldn't have made it the last ten years there. (PS Mike Capps was right... the Wii was a virus after all.)"

Cliffy B offers his take on Adam Orth's resignation and the art of being inappropriate

"All games are a form of cultural expression."

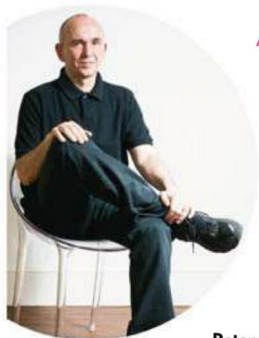
Quantic Dream co-CEO **Guillaume de Fondaumiére** is crusading for the European Commission to see things his way



"At the moment, as far as [players are] concerned, they're watching *Skyfall*, and we're asking them to go to free-to-play, which is like watching *In The Night Garden*."

There's got to be a middle ground."

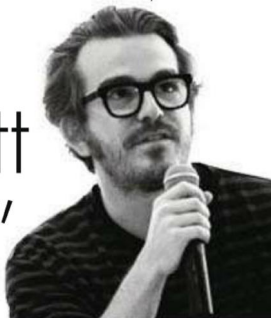
Peter Molyneux, head of 22 Cans, colourfully identifies the chasm that divides an industry



"[Fez is] #1 on Steam right now and it's not even out yet."

You should boycott harder, nerds."

Polytron's **Phil Fish** taunts his army of vocal detractors



ARCADE WATCH

Keeping an eye on the coin-op gaming scene



Game *SciShooter*
Manufacturer MocapGames

Some 16 years after *Virtuality* dropped out of the arcade scene, Brighton-based MocapGames has a new VR system for arcades. With none of Oculus Rift's cost-saving solutions for the home market, Mocap's Pod is a large-scale sit-down unit with a head-mounted display and the developer's own Mocapsuit controller. Worn over the shoulders, the controller wraps around the user's arms and tracks arm and hand movements, while walking is handled via the built-in joysticks.

MocapGames debuted its VR Pod at the IAAPA amusement park expo in Hong Kong in June last year and recently location tested a two-player linked unit at the Butlin's holiday camp in Bognor Regis, but the Pod can support up to ten players in its first game. *SciShooter* – a simple first-person deathmatch powered by Unreal Engine 3 – isn't pretty or clever, but it's built for VR in a way Rift's current catalogue isn't, placing a shield in your left hand and a gun in your right, with full motion controls for both.

MocapGames has two more games in development – rock-climbing game *Hang Tough* and *Zombie* – but the studio's strength is more in tech than game design, and Pod will have to depend on the thrill of the 'ride' rather than the game to attract players as it rolls out to arcades this summer.



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My favourite game

Thom Green

The drummer of Mercury Music Prize-winning dub-folk quartet Alt-J on Pokémon obsession, tour bus golf and being terrible at Alex Kidd

Alt-J, or Δ (the delta symbol, meaning change, which is the result of that Mac keyboard shortcut), is the current darling of the UK music press. The quartet released its debut album, *An Awesome Wave*, early last year and scooped up the Mercury Music Prize just a few months later. We talk to drummer **Thom Green** about guns, golf and gaming.

The band's named after a Mac keyboard shortcut for a symbol used to show change in mathematical equations. Is it fair to say you're in touch with your geekier side?

I think we're probably more geeky than a lot of bands, yeah [laughs]. With touring, we stay pretty calm about things and we have our own little weird interests. We met at university and bonded over a lot of pretty nerdy things there.

Are you a longtime gamer?

Yeah, since I was little. The first thing I had was a Master System – it had *Alex Kidd* built in, and I loved it. It's probably a crap game, but when you're young it was amazing. I used to play it all the time, but I couldn't get past that fucking frog. And he was on the first level!

Do you think gaming and touring are natural bedfellows?

Yeah, I think they go pretty well together. If you can entertain yourself with a computer game that you like, it passes the time really well. Our tour bus for the UK and Europe has an Xbox on it and it's great. And as a result, there's stuff that we play that I would never normally choose to, like *Tiger Woods PGA Tour 12*, for

FUNNY BUSINESS

Alt-J's music draws on folk, dub and rock influences, mixing off-kilter beats and fuzzy, lo-fi basslines with vocal melodies that dance in and out of plainsong territory. It sounds like an acquired taste on paper, but one that has proven to have wide reach thanks to singles such as *Fitzpleasure* and *Breezeblocks*. The band has just finished a US tour and is embarking on an Academy tour in the UK in May. UK and European festivals will follow, after which the band plans to stay off the road and begin work on its second album.

example. I would never buy that game, but with the four of us playing it together it's actually really good fun. Time flies by, especially when there's four of you playing it, because it takes all day to get through a hole. I've got an iPad Mini, too, and I have my laptop. The iPad Mini is a really good size for gaming, much better than the original iPad. Everything's more accessible. I also play a lot of chess online and against the iPad.

Are there any game soundtracks that have stood out for you?

I was obsessed with *Call Of Duty: Modern Warfare* when that came out. There's some good moments in that. When you're playing the campaign, it's very suspenseful. But I think the game soundtracks that stand out for me are usually compilations. Like *Tony Hawk's Pro Skater 2*,

for instance. I can pretty much remember every single lyric from every single track that was on there. Whether that's a good thing or not, I'm not sure.

You're scoring Bruce Goodison's film *Leave To Remain*. Does soundtracking a game interest you at all?

We've never spoken about it as a band together, but if there was a game we all liked and it was something we wanted to put our name to, then I don't see why not. But it's kind of complicated with things like that, because there's four of us, and we all have different ideas. Sometimes we get offered TV commercials, and

I might be fine with it, for example, but Gus [Unger-Hamilton, Alt-J's keyboard player] might not agree with the product, or vice versa.

Perhaps *PGA Tour 2015*?

Yeah, definitely – I think we probably would actually do that [laughs]. I don't think it really needs any music, though, just clapping and audience noise. We could do that.

So does your obsession with *Modern Warfare* make that your favourite game of all time?

Well, I was thinking about this, and when *Pokémon Blue* came out on the Game Boy I was obsessed with that, too. But then I thought about it a bit more, and it probably actually is *Call Of Duty: Modern Warfare*, yeah. I bought an Xbox specifically to

play *COD*, [because] all my friends were playing it. There's a lot of skill involved, and a lot of strategic thinking. Apart from *Pokémon*, I've never really played RPGs [like] *Final Fantasy*, *Zelda*, any of that. But I really liked what *COD* had: the weapons, the endless upgrading. You can spend a year on it, which I did, and not get bored. Xbox Live was new to me at the time, and it was just brilliant being able to play against random people all across the world in such an intense game. I think that's probably my favourite game that I've ever had. I miss it, actually – I don't ever get the chance to play it at the moment. ■



Δ is (from left) keyboard player Gus Unger-Hamilton, guitarist and vocalist Joe Newman, guitarist and bassist Gwil Sainsbury, and drummer Thom Green



Assembler



Do Not Touch

Do Not Touch
<http://donottouch.org/>
This is a crowd-sourced music video from Dutch design house Moniker for Light's single, Kilo. Intended to celebrate the final years of the computer cursor, Do Not Touch tracks your mouse movements as it asks questions like "Where are you from?" and "Where would you like to go?" before compiling the gestures of thousands of visitors into a swarm of arrows. Some follow the instructions, some willfully buck the system, and some just idle on the page while their operators try to work out what's going on.

The King's League:

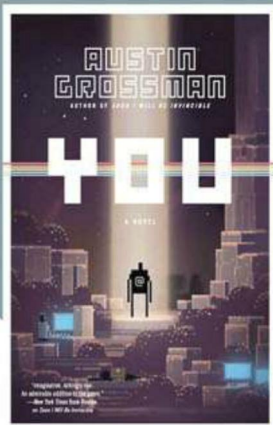
The King's League: Odyssey
www.bit.ly/180WQ33
 Light but endearingly so, *The King's League: Odyssey* is a game of rapid levelling and even shorter battles. The big difference to the classic RPG structure is that it's what you do out of battle that counts towards your warriors' progression, not the feats you achieve in it. Encounters are split into league battles (which occur roughly every 30 days), quests and special events, but you boost your soldiers' stats by sending them to, for example, the gym to work on their strength. Each endeavour takes a number of days to complete, eating into the time until that next league battle arrives. You can also conquer villages or accept quests for factions, improving your standing with them. The result is a moreish and panicked scramble to ensure your time is used well.



THIS MONTH ON EDGE

tin Grossman

You by Austin Grossman



Fans of bright candy

Hardcore peripherals

Come on, who didn't want a VR headset for their Jaguar?

First *Infinite*, and now

First *Infinite*, and now
Metro: Last Light

not be able to

We might not be able to see Vita's screen, but at least we're outside

Who can't foresee

Who can't foresee regretting this choice later in life?

Hardcore peripherals

Face it: you can't wear a VR headset without looking a tad absurd

FA gets away with

EA gets away with a fiasco by keeping stum

There's always

One of the reasons

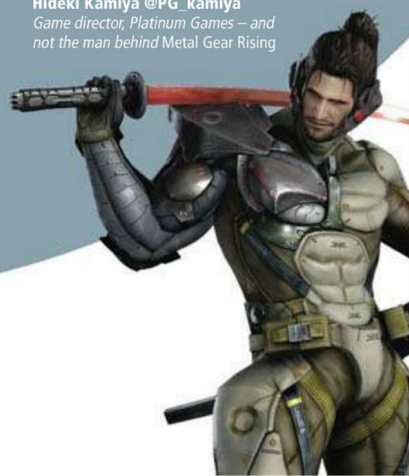
Ian Marsh @een
Game developer, NimbleBit

Adrian Chmielarz @adrianchm14
Game designer, The Astronauts

Jonathan Jacques-Belletête @Jonatchoo
Art director, Eidos Montreal

REPEAT: I said 10000000000000000000000000000000
0000000000000000000000000000000 times that I
have nothing to do with *Metal Gear Rising*.

Hideki Kamiya @PG_kamiya
Game director, Platinum Games – and not the man behind Metal Gear Rising



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DISPATCHES

JUNE

Within Dispatches this issue, Dialogue sees **Edge** readers discuss why fun is the quintessential component of all games, why virtual violence isn't something to be ashamed of, and the death of one of gaming's critics. Then in Perspective, **Steven Poole**  takes Apple to task over its stance on games that dare to comment on real-world issues, **Leigh Alexander**  reports on the most emotional GDC ever and how the industry is changing for the better, and **Brian Howe**  intercepts an email chain that highlights the dangers of reading too much into certain games.



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Issue 253

Dialogue

Send your views to edge@futurenet.com, using 'Dialogue' as the subject. Letter of the month wins a PS Vita



Kicksulkers

It shocks me to hear so many developers blaming everything but themselves for the failure of their Kickstarter campaigns. It's endemic of a larger and older problem: not having a player's perspective. Think of yourself on your laziest day, the day you want nothing from your entertainment but the halcyon memories of better days and the warmth of a predictable incentive loop. Your audience, beaten down by hundreds of hours of creatively unfulfilling work, is much lazier than this. The further you ask them to stray from their comfort zone, the more hesitant they'll be. It doesn't mean you can't innovate, but it does mean you have to do it brilliantly.

Dreams of wild success are intractable once you've sacrificed enough for a project, so it's hard to blame developers for not seeing their faults. Instead, I wait patiently for more to start thanking the wild successes of Kickstarter. These projects tell us what a professional pitch looks like, define the appropriate gap between what's shown and

what's imagined, and structure the scope of the game for maximum scalability. These are all phenomenal skills, and once they're treated this way, Kickstarter is going to spark a renaissance in development. We can create a new standard where bad ideas are shuttered before they consume the souls of hundreds of developers, and genres ignored by investors give birth to new classics. We just need to grow from our mistakes.

Marcus Mattern

Blaming others is hardly the way to make progress, but what about the case of small studios? They often haven't got the resources to develop a pitch for even a brilliant idea to the level of an established studio. And if these ideas can't find backers, is that a subversion of what the Kickstarter system was intended to achieve?

All in good fun

Last month you brought up a good point while replying to Paul Byron in essentially saying games don't need to be fun. Now I couldn't understand this at all, because what defines the games I buy is if they look fun, or I play a demo and have fun with it. I couldn't care less about what the graphics look like; I couldn't care less about the story. As long as I can sink my free time into something and enjoy that time, that's what matters.

Now I understand that fun is subjective, but I feel like if you know you find a certain genre fun, then you are more likely to pick up similar games. I didn't like *Heavy Rain*, even after all the amazing reviews, because, to me, it wasn't fun. Is fun not really all we have?

I think entertainment can be challenging and make you think about tough subjects, but you won't do that if you don't find that fun. Plenty of people will stick with *Mario* and *Pokémon*, and never play games that give you tough things to think about. Other people will play *Spec Ops: The Line*, and come out thinking hard about war and what it is to be a soldier. I remember playing *Medal Of Honor: Allied Assault*, and that Normandy landing sequence made me think about war differently, just like the Saving Private Ryan scene did for many cinemagoers. But, for me, that was all the fun of being part of that moment. I had fun thinking about what war means, what war is, and why we as a species do it. But all of those games can be enjoyed

on a completely different level by shooting people in the face if that's your thing.

I just believe that fun is something you have when you enjoy something regardless of the nature of the content involved, and as such saying games don't need to be fun is false. I think fun is one of the only things we have left in gaming that is a core fundamental of every experience.

James Furlong

No pain, no game?

Videogame violence is kind of an ever-recurring subject around the industry. While I was reading Leigh Alexander's columns in E251 and E252, and *The Making Of Hotline Miami*, it got me thinking how far we had gone, and was it too far? Either way, violence in games is here to stay. While media such as film or photography try to justify its use as a way of making a statement, elevating themselves and becoming meaningful, games make no such claims. So the question that really struck me is whether or not videogame violence really needs to be justified.

Let's take the first *Assassin's Creed*. It is a surprisingly violent game, not only because of the obvious stabbing people to death, but because of the gruesome counterattack executions — enough for PEGI to call its contents 'extreme violence'. Was it really justified for the developer to put so much brutality into what at its heart was a part-stealth, part-parkour game? Ubisoft could have toned the violence down, taken most of the blood away and got a nice PEGI 12 rating. It would be understandable for a game where the player is rewarded for killing without making a bloody mess. So gameplay- and also story-wise, the violence serves nothing. It has its purpose, but no meaning. That's just like in any other game, including *Hotline Miami*, which asks you the already-infamous question "Do you like hurting other people?" That's a game to make me realise that the answer is yes. Not in real life, but gamers' lust for violence is a real thing, and I enjoy hurting other people within game worlds. People tend to be ashamed to admit it openly, especially when the most highly praised games are scorned for use of so-called 'unnecessary violence' like *BioShock Infinite*.

I don't want to be ashamed of enjoying violent videogames and I refuse to. I want to take them as they are, and as they were

intended to be experienced by their creators. Necessary or not, meaningful or meaningless, violence is in games and I gladly embrace it.

Kamil Bazydło

You're right, violence isn't abating, but at least game creators appear to be developing a self-consciousness about its place in games even as they offer ever-more-elaborate ways to cause virtual death. Ultimately, though, who wouldn't like to see games being more creative than brutal?

Art critiquing

So Roger Ebert died. This is sad news, and I hope that lovers of videogames will regard it as such, despite the animosity that he sometimes displayed for the medium. The infamous statement "Videogames can never be art" may indeed be ignorant or arrogant — it may even seem ludicrous to those of us who have a great deal of passion for interactive experiences. The fact is, though, the face of gaming shown to those who are uninitiated is largely unappealing and shallow, and far too obtuse and ugly to be considered art. This public face makes it impossible for non-gamers to understand the depth of experience available. Experiences like *Journey* simply don't make sense to those who understand gaming via *COD* and *GTA*. It is still ignorance, but it is ignorance caused by the industry itself, and its consumers.

If we want games to be taken seriously, and to be experienced fully by a more diverse audience, we need more people like Ebert. We need people to criticise, to spit at, and to kick and belittle the industry. Adversity is the greatest motivator, and what he said was more than needless criticism. It was a challenge. His incredible passion for film made the ravine of quality between the two media look impossible to close.

I believe he misunderstood the potential of games, however. Art is the meeting of creativity and imagination. But it is more than that, it is something that causes a stirring, something that really makes us think. It is something abstract and undefinable, but something that we tend to know when we see it. Games aren't there yet,

but they are getting closer. However, we need passionate people like Mr Ebert to continue to challenge the artistic integrity of the medium. Games have lost both a friend and an enemy in the death of a single man.

Matthew Leigh

Anti-social gaming

I'm reading the article about *Destiny* in E252, and in particular the comments by Bungie's Pete Parsons. I suspect I won't be alone in saying that I am not interested in a game that forces me to play with others for no good reason. I'm an introvert — that doesn't mean that there's something wrong with me, just that I find interacting with others hard work. Gaming is one of the ways I can escape from that and recharge my batteries, and any game that doesn't allow me to do that isn't on my radar.

For me, fun multiplayer gaming is what you do when you're playing a sports or racing game with friends in the same room, or

playing Wii games with my nephew and niece. It's not that I'm against multiplayer online games — plenty of people like them and there's nothing wrong with that choice, just as there's nothing wrong with my choice.

I've tried *Eve* and *The Old Republic*, and *Watch Dogs* sounds exceptional enough that I'm prepared to 'risk' the online element of it. But I

don't want my floor sloped to force me to participate in multiplayer. No, Pete, I don't want to help others and I don't want to be helped. And I don't want my choice to affect the people who do expect the help and give and take you get in a multiplayer environment, so I won't be buying *Destiny*.

Rob Moir

The trend towards always-online games will slope the floor even more steeply, and it's clear that it doesn't serve all gamers. Does that matter to publishers and hardware manufacturers? Apparently not — not when it's becoming all about maintaining a constant link with their consumers, whether that's to keep them abreast of updates or, more cynically, expose them to shiny new things to buy. Talking of shiny things, enjoy your singleplayer-friendly PS Vita.

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Disney kills LucasArts

Disney are starting to f**k up Star Wars already? They haven't even managed to make a crap Star Wars film yet. At least Lucas waited until the Phantom Menace.

Alistair Taylor, Facebook

I will hate Disney forever if they actually scrub 1313. I thought they wouldn't be so bad for Star Wars after the horrible things Lucas did himself, but every single [bit of] news I've read about them since made me sad as a Star Wars fan and gamer.

Adrian Hitz, Facebook

Does Microsoft need to do damage control for the next Xbox and show it sooner than late May?

Always online? Not gonna buy it, and I'm sure I'm not the only one, so there's not much damage control they can do. Not everyone has a constant super-fast fibre optic broadband connection with unlimited downloads, and should my Internet be playing [up] then I wouldn't be able to play singleplayer games. According to rumours, that is.

Barry Cobra-Kai Wilson, Facebook

I won't be interested in the next Xbox anyway, but I don't see the need for them to rush out and dispel any rumours. Agreed, it's looking pretty grim, but the PS4 won't be out before they actually reveal the next Xbox, so no rush for them.

Craig Sheppard, Facebook

Perhaps stopping arrogant directors insulting a significant proportion of their fan base on public forums would be a good start.

Chris Bourne, Facebook

Bungie's forthcoming *Destiny* may be all about the connected experience, but Rob Moir wants developers to keep in mind the interests of solo players



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STEVEN POOLE

Trigger Happy

Apple rejects the notion that games are the place for comment, but it's built right into the medium

Why does Apple hate videogames so much? The gatekeeper of the walled garden that is the iOS games store is routinely geekslapped for turning down games it deems too edgy. A couple of months ago, a WWII naval game was rejected for featuring the Japanese flag. Now Apple has rejected Littleloud's *Sweatshop HD*, a blackly satirical and highly enjoyable game of labouring in factories to make clothes for corporate retailers. According to an interview by Pocket Gamer with Littleloud's **Simon Parkin**, "Apple removed *Sweatshop* from the App Store last month stating that it was uncomfortable selling a game based around the theme of running a sweatshop. Apple specifically cited references in the game to clothing factory managers 'blocking fire

escapes', 'increasing work hours for labour', and issues around the child labour as reasons why the game was unsuitable for sale."

You might think that those should count as reasons why the clothes made in sweatshops are unsuitable for sale, not why a rigorously fact-checked game about the phenomenon should be denied a place in Apple's own sales channel. Evidently, the truth is worse than it would be if Apple just hated videogames – at least that would imply a passionate negative engagement with the medium. Instead, Apple simply doesn't understand games. According to the App Store developer guidelines, Apple thinks of games and apps in general as different from "books or songs, which we do not curate". This is a particularly odious usage of that self-regarding modern buzzword 'curate', which generally implies that on the Internet everyone is their own private museum director. For Apple, curation means slamming the profit-door in the face of apps and games that attempt to rise above their station. "If you want to criticise a religion," Apple advises, "write a book. If you want to describe sex, write a book or a song, or create a medical app."

One obvious rebuttal to this dummkopf's idea of electronic art is that videogames based around social commentary – newsgames, critical games, and so forth – have been around for longer than the App Store. But I would like here to insist on a more general point, which is that it's impossible to make a game – or even an app – that doesn't contain some social, cultural, or political commentary, whether it is made explicit or buried implicitly in the aesthetic decisions, or what **Ian Bogost** calls the game's "procedural rhetoric".

Let me take a look at what is currently installed on my own iPad. *The Room*, for a start, is arguably making a sardonic comment on the virtual age's incurable nostalgia for the haptic mechanical; it does seem to imply, after all, that the most satisfying application for a flatscreen fondleslab is to simulate protuberant gears, knobs and drawers. It is in content a dream of an alternative steampunk present, and in format the most savage possible indictment of the very technology that makes it possible. If you think that is far-fetched, you will at least agree that *Waking Mars* could

easily be cosponsored by NASA and Greenpeace, since it is a (very beautiful) game whose implicit argument is that we should treat space as an arena for ecological thinking, rather than just a twinkling backdrop for blowing up everything in sight. And *Little Inferno* is rather obviously a bonfire of modern vanities, a deliciously cynical counterblast to the ruling ideology of accelerated materialism. How that ever got past the gimlet-eyed Apple thought police is difficult to imagine.

There is simply no such thing as a videogame that embodies no social or cultural comment at all. Like all artworks, videogames are products of human creativity at a particular time in history, and cannot help reflecting that fact. But the lesson doesn't stop at games. Look at the stealthily political arguments made by the aesthetics and functioning of Apple's own iOS apps.

The nasty, skeuomorphic faux-leather trim of the Calendar app, for instance, projects me into the stifling psychic space of a 1970s mid-level executive and quietly encourages me to conduct my professional and social life

accordingly. When I turn on the Do Not Disturb feature, I get an unhideable crescent moon in the info bar, as though it's somehow OK to disturb me at any moment as long as the sun is shining. And the fact that the phone number app is called Contacts shores up the weird modern hegemony of this term, which – according to Melissa Gregg's brilliant book *Work's*

Intimacy – is designed deliberately to blur the distinction between the categories of 'colleague' and 'friend'; so that the workplace feels like our emotional home.

Dig deep enough, in other words, and we'll find that not just all games but all software has buried political, social or cultural biases for which they implicitly argue. I recently read in Ian Sansom's wonderful *Paper: An Elegy* that the architect Yona Friedman was an early refusenik of computer-aided design. He complained that "All the pre-fabricated software has implications that are not stated." This remains true of the software we use today, from Office to *BioShock*. To be perfectly consistent, Apple should really ban all of it.

Steven Poole is the author of *Trigger Happy: The Inner Life Of Videogames*. Visit him online at www.stevenpoole.net

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LEIGH ALEXANDER

Level Head

Scenes from an emotional GDC demonstrate why diversity and experience are key to this industry

Honestly, I never thought I'd be able to conceive of a Game Developers Conference as 'emotional,' but this year's was. There was an amazing groundswell of support for perspectives that the industry had once declared, at least implicitly, ought not to be a priority: the equality and inclusion of women and minorities, and an emphasis on authenticity, vulnerability, and the role of honesty and individual experience in the creation of interactive entertainment.

I saw Manveer Heir talk about how *Papo & Yo* had inspired him to think of games as more than power fantasies. I saw Anna Anthropy give a raw, gutting reading of a poem about the historical diminishment and disadvantage of women and queer people in the industry — and receive a standing ovation. I saw veteran

women developers asking us to think about their daughters, and what world they'll inherit, and be heard. Game critic Porpentine spoke to a packed room about the innumerable and little games about personal experience and individual identity to emotional applause on behalf of those in games who are just getting their chance to be celebrated for the first time.

There are so many in the industry who resent, or who negotiate uneasily, this movement toward emotion and individuality in games. They are the people who, when a woman writer makes the grievous 'mistake' of including a picture of herself in an article about games, chastise her for self-insertion in a way they never have done to her male counterpart. They are the people who, when a writer tells a personal tale where the pronoun 'I' stands defiant in every sentence, roll their eyes and tell her to get back to the point.

"Games are a business," armchair industry analysts emphasise in online forums. And indeed they are, but they are also a human work, and seeing them treated as such at an event like GDC was an unexpectedly profound relief for me after all the years I have spent writing in the service of games as a design product, as an all-important 'business.'

Of course, not everyone is on board. A creator like Mitu Khandaker (*Redshirt*) makes an impassioned call to end racism in development, and to my left and right, big-name developers are hanging on her every word — yet my eyes steal through the crowd and I can make note of who's not clapping, a stray few who still haven't sorted out why these issues have started mucking up their precious 'business.'

Here's the thing: games as a traditional business are in crisis; in America we have an image problem that sees our executives heading to Washington to explain for the thousandth time that games don't cause anyone to kill. We're constrained at retail, and even die-hard fans are beginning to express a dubious commitment to next-gen hardware.

After trundling through spacescapes wielding lasers for all of our lives, as adults we players may not be so willing to open our wallets just because the laser looks a little more lifelike than before. The industry is going to need to have something new besides white

male faces with pore-perfect fidelity and digital eyeballs wet with plausible gloss.

Maybe that's why there are so many people who look uncertain, or scared. Their budgets swell as their revenues wane. Having never thought about perspectives outside their own before, they are scared about how to be relevant. They long, perhaps, to stand before some great machine into which they can simply input the golden algorithm for a perfect level design and press 'manufacture'.

That's where all these pesky 'issues' come in. Perhaps if we can impress upon the hesitant that new perspectives are, in fact, a business issue, we'll thrive. No mature adult wants to buy their child a game where there is presumed to be a 'default' way to be human, and where all others are simply optional.

If you belong to the default category you've never experienced this friction, so you don't care. But if you can only make games for people like you, your revenues will suffer — because the industry will not for long continue to contain only people like you. It's changing, and your audience is well ahead of you.

No adult wants to buy their child a game where there is presumed to be a 'default' way to be human

If your marketing team is relying on a conveniently constrained and dated idea of who wants to play your game, get new marketers. Currently major publishers have hired evangelists who have not even yet managed to sell the consumer landscape on the idea that one can make an exhilarating, immersive game without a gun in it — even now,

when selling that idea is crucial to the positive perception of our industry.

Bear in mind the mobile gadget industry has marketers that can cause people to line up outside the store for the launch of a \$600 phone even when there are \$200 phones that have the exact same functions. It's possible to adapt to a business reality where more games can sell to more people. In fact, it's crucial.

If you must, sit on your hands while others applaud political issues that you consider irrelevant to your business. Those on the forefront of our industry will continue to convene and be heard in the years to come, though, and unless you revise your position, you'll simply no longer be in the room.

Leigh Alexander is a widely published writer on the business, design and culture of videogames and social media

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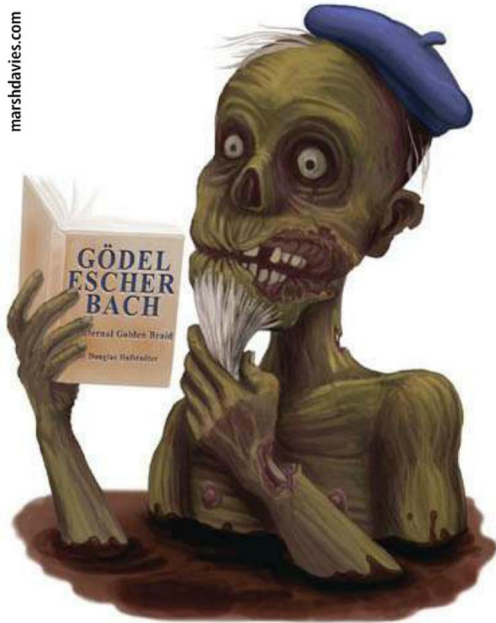
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BRIAN HOWE

You're Playing It Wrong

A curious email chain emphasises the danger of writers reading too much into the wrong game

From [EMAIL REDACTED] to editor@GameBro.com: *Bob, here's the piece you graciously commissioned me to write for Game Bro Magazine. Sorry it's six months late and I haven't been returning your emails; terribly busy with the book contract, speaking circuit and magazines with tonier circulations than yours. But I think you'll agree it was worth the wait. I went a bit over the word count to plumb some deeper themes. It's called The Ineffable Effervescence Of Is-ness.*

It begins with a dark screen whose darkness is somehow the very quiddity of darkness, an uncandled Jungian darkness of mere being. Whence this strange and wondrous game, you wonder strangely, that

plunges you into the Nietzschean abyss with nary a title screen to Cerberusian guard the gate between virtual and real? Is your character meant to be sleeping, or blind? And is this blindness literal or metaphysical, in the sense that mankind stumbles through the blindness of unknowing? You press Start. Again. But the screen keeps its own dark counsel.

Very well, you think. The game was created in a foreign country you are patronisingly fond of, and you can countenance a soupçon of extra-Occidental oddity. You begin, haltingly, to 'play'. But after an hour of operating the controls in rapt French mimean silence, you start to intuit movements and shapes in the darkness, Lovecraftian horrors skirted, and Le Corbusierian corridors traversed. You work the controls of your invisible avatar with an ambidextrous Wiebean certainty. You feel yourself to be penetrating Mariana Trenchian philosophical depths in the unchanging darkness, finally arriving at an epiphany: you have forgotten to turn on the console.

Upon doing so, the screen blinks to life, displaying an image of a barren landscape that conjures feelings of loneliness, grandeur, high dudgeon and mild indigestion – or is that the cheap falafel you had for dinner? This ambiguity feels significant in professedly ineffable ways that you nevertheless feel compelled to eff. Now the screen divulges two Sophie's Choicean options: 1 Player followed by 2 Players. But why not 2 Players then 1 Player? Why not Monologue and Dialectic? Or Platypus and Marmalade? Flummoxed by the question's vagaries, you read Heidegger and Kierkegaard until certain that you are fundamentally alone in the world, and then select 1 Player.

Now the screen blooms like the Gardens of Versailles, if the Gardens of Versailles were a picture of a Hobbesian brown mud field strewn with smoking corpses. The common player might mistake this for a generic action setting, missing the clear oblique reference to the Baudrillardian desert of the real. You are not the common player. You read books not linked to media franchises, write pensées in respected magazines, grasp that ostensibly insignificant clashes of minor details serve a fathomless intellectual design that can only be winkled out with inscrutable jargon and similes, which

you exoterically dispense like a southpaw taxidermist in a clawfoot bathtub.

For the second time now, this is unlike any other game you have hitherto essayed. Words and names float hither and thither across the screen, though whence and whither – who knows? Discombobulated from the images and thus instigating a rupture between language and worldity, these mysterious 'credits' massage the McLuhanian sensorium with Derridean instability or, as it is said in Latin, *ego sum sermo ex meus cillus*. Meanwhile, the dramatis personae trample onto the mud field. You meet Gordo, a porcine, Lohanianly freckled infantryman; Stud, a Ferrignoian trench sapper with soulful hipbones; and Gilf, a randy blonde bikini model wearing a kepi.

Gordo and Stud are great strapping brutes but manoeuvre with a kind of leaping Bambian elegance, even while Stathamianly ravaging mud zombies to music played on, of all things, a cor anglais. This juxtaposition of explosions and English horn, Gordoan brutality and Gilfian eros gets to the heart of the game. You think, by way of unjustly assured conclusion,

You read Kierkegaard until certain that you are alone in the world, and select 1 Player

that this precisely what makes the game so imprecisely brilliant: in its very is-ness, it is what it is and what it is not, which is, in one way, everything, and in another, nothing.

From editor@GameBro.com to [EMAIL REDACTED]: *Thom, Bob here – have to confess I'm a bit caught off guard by this piece. We asked for a 100-word review and we're not sure you even played past the credits. We'd still like to get your name in the mag, so we're going to run the edit below. If you have any problems, do let me know.*

Mud Dogs is another competent *Gears Of War*-like that features robust singleplayer and co-op campaigns. The graphics are as good as anything we've seen this generation, rendering the story of the dynamite-chucking Gordo and Stud exploding all the zombies in *Mud World* as clearly as mud can be rendered. Bouncy tart Gilf, predicted to be playable based on early concept art, turns out to be more of a helper character, unfortunately used as mud zombie sex bait. The story is a bit sexist and shallow, and you've played it before, but who cares? Dynamite, bro! Mud zombies! Booooooobs!

Brian Howe writes about books, games and more for a variety of publications, including *Pitchfork* and *Kill Screen*

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Open-ended problems

Clint Hocking was talking about *BioShock* when he coined the term ludonarrative dissonance, but it's in open-world games, not FPSes, that videogame stories are most frequently undermined by their mechanics. *Grand Theft Auto IV* protagonist Niko Bellic came to America in search of a new life free of death and destruction. Within hours, the story had him killing thugs for a pittance. This is the disconnect at the heart of *Grand Theft Auto*, a split between the story Rockstar wants to tell and the game its customers want to play.

Our first look at *Grand Theft Auto V* (p42) suggests Rockstar plans to end all that. The three protagonists are different people, each with their own backstory, motivations and abilities. While it might be hard to buy the notion of retired bank robber Michael skydiving or getting into street races, thrill-seeking repo man Franklin is an ideal fit. And unhinged former pilot Trevor is just the man for the destructive rampages.

With that, however, comes a new challenge: coherently fitting each of these characters' lives together. As we find out, they're great when out on a heist together, or going about their business alone. But where once a *GTA* game could home in on a single theme – retelling *Scarface* or *Miami Vice* – now it has to blend a wealthy 50-something white male's dysfunctional family life with a violent nutcase getting mixed up with biker gangs and a young black man's struggle to prosper on the right side of the law.

Making a game means solving a succession of problems, and in finding the solution to one you often create another. Blizzard has successfully tailored *Diablo III* (p68) to a console controller, but in doing so risks diluting precisely what made the PC game so special. That, at least, is a danger Rockstar doesn't seem to face: whatever changes it makes, its latest is still definitely a *Grand Theft Auto* game.

MOST WANTED

Sir, You Are Being Hunted

Android, iOS, PC

Some new gameplay footage has put us in the mood for a spell of deadly hide and seek in Bad Robot's bleakly bucolic world. It turns out we won't be alone, either, but in the company of a helpful floating blue ball called Walters.

Gunpoint

PC

This fetching stealth puzzler still hasn't got a final release date, but it has at least secured a slot on Steam for when that date finally comes. And creator Tom Francis has taken a break from making PC Gamer in order to put the finishing touches to it, so that should be soon.

Splinter Cell Blacklist

360, PC, PS3, Wii U
Chaos Theory was too complicated and Conviction too shooty, says Ubisoft's Jade Raymond, so *Blacklist* meets them in the middle. Certainly, it's possible to sneak through a level undetected, but aggressive players won't find the game nearly as punitive as classic *Splinter Cell*.

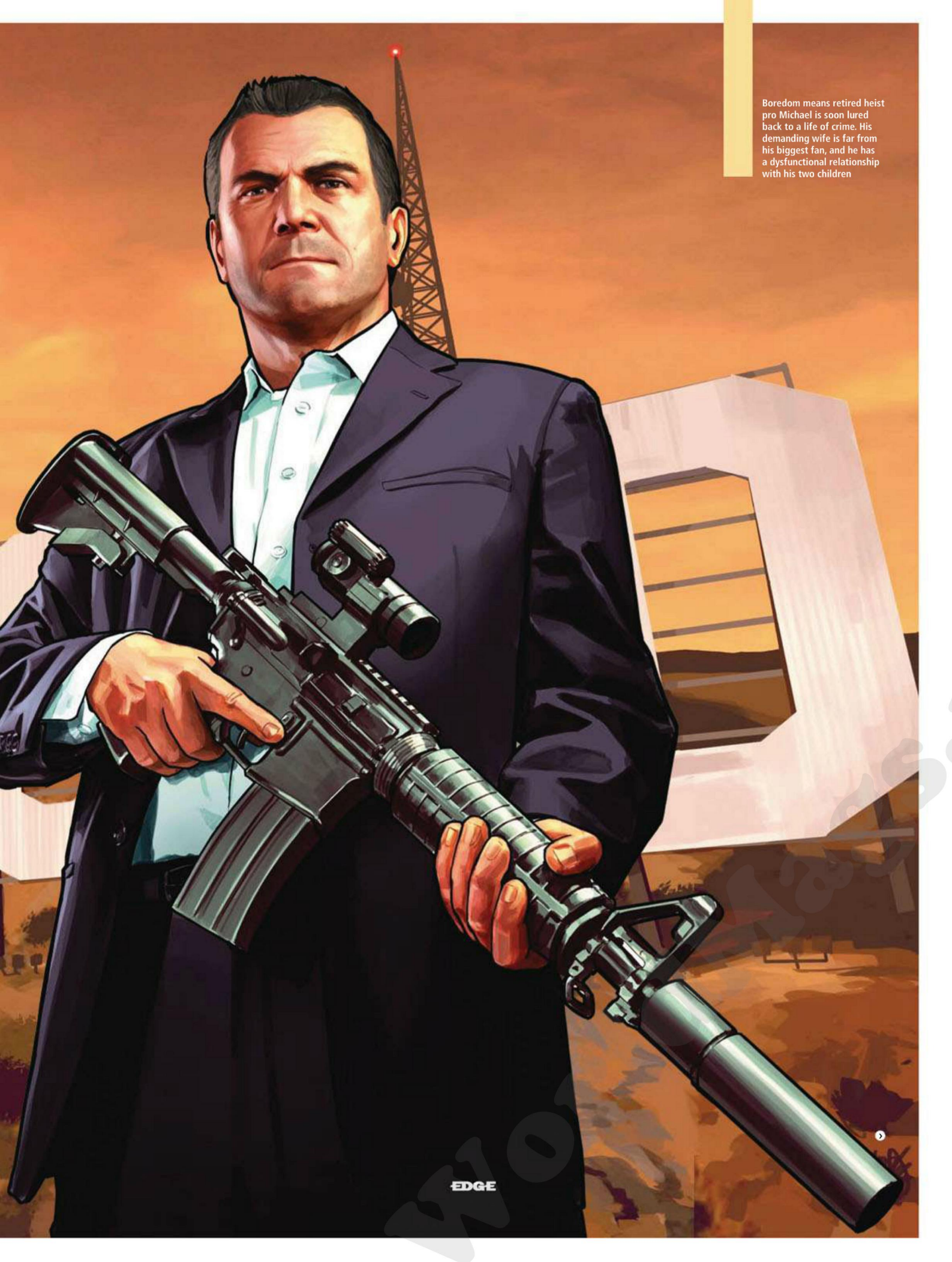


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GRAND THEFT AUTO V

Take a spin – and a skydive, and a swim – in the sprawling Blaine County

Publisher	Rockstar Games
Developer	In-house (Rockstar North)
Format	360, PS3
Origin	UK
Release	September 17



Boredom means retired heist pro Michael is soon lured back to a life of crime. His demanding wife is far from his biggest fan, and he has a dysfunctional relationship with his two children



GTAV

RIGHT *Red Dead Redemption* taught Rockstar a lot about climate, and the final *GTAV* will have a weather system that's dramatically different to the one found in *GTAV*



Rockstar hasn't put out a full *Grand Theft Auto* game in five years, but as we lay our eyes on the fifth in the series, it's clear that the company has never really stopped thinking about how to follow *GTAV*. Last year's *Max Payne 3*, as pure a thirdperson shooter as they come, has had an obvious impact on the evolution of *Grand Theft Auto*'s gunplay. From Western epic *Red Dead Redemption*, Rockstar learned how to make sparse rural areas as interesting to explore as they are to behold, a skill that will be vital in crafting the biggest world the company has ever attempted and one that's apparent in the opening moments of our demo. *GTAV*'s two DLC packs, meanwhile, showed how shifting focus beyond a single protagonist could enrich the experience, laying the foundations for *GTAV*'s three playable characters.

Players can switch between the trio – notionally retired heist mastermind Michael,



The demo heist mission starts at an out-of-town truck stop. In the final game, players will plan heists, choosing disguises, supporting crew and how to approach the job itself

Make your character choice and a grainy camera pulls up and out to the heavens

adrenaline junkie and car lover Franklin, and Trevor, an unhinged headcase with a taste for an altogether different kind of buzz – at any time when off-mission, but these are people with their own lives. They don't simply hang around waiting to be summoned, and could be up to any number of things when you switch to them. We open with Franklin, who's about to jump out of a helicopter 1,000 feet up in the hazy Blaine County sky. When we switch to Trevor, he's waking up on a beach in the middle of nowhere, but he's blood-spattered, bottle in hand, and in his underwear. Michael

is just stepping out of the Von Crastenburg hotel in Vinewood at dusk – time will sometimes pass when you switch, allowing Rockstar to subtly nudge the story forward during downtime. Transitions are handled by satellite: press down on the D-pad to call up the character wheel, make your choice, and a grainy camera pulls up and out to the heavens, panning across to your chosen protagonist's location and zooming back in at speed.

Each of the three has their own interests, and it seems that *GTAV*'s vast array of activities and minigames will be divvied up between them according to their individual tastes. They'll each stick, broadly speaking, to one area of the map, helping players move about the humongous world at speed – a welcome option, given that this sprawling, varied landscape will be completely open for you to explore from the word go.

Back up in the sky, Franklin jumps, tugs on his parachute cord and begins a descent that will take a full three minutes. There's barely a building in sight, and no vehicles until a couple of ATVs come into view farther down. We're in *Red Dead* country, then, with the soporific rhythm of hooves on dirt replaced by the whistle of wind through silk and a new, dynamic musical score. It's another series first and here means a soft synth that could have been lifted straight from the *Drive* soundtrack. Closer to Earth, we see *Red Dead*'s foliage, and *Red Dead*'s wildlife, but not its water. The lake at whose edge we eventually touch down looks remarkable, crystal clear and shimmering in the morning sun, good enough to dive into. Soon enough, we will.

Trevor's not alone when he reawakens – he's surrounded by conked-out members of The Lost, the Liberty City biker gang from



GTAIV's demanding vehicle handling is one of the reasons that its multiplayer remains so popular. GTAV's looks to be friendlier, but in no way dumbed down

Franklin is the most skilled driver of the playable trio, though the others will be able to improve their skills. As in *Skyrim*, abilities will improve the more players use them





GTA V

BELOW While swimming, sharks are marked on the radar, which has also been overhauled. The view of the land is flatter, much closer to an in-car GPS system, with three coloured meters beneath for health, body armour, and special moves



The dynamic score will soundtrack the moments licensed music can't reach. There's no news on radio stations yet, but we heard Waylon Jennings' 'Are You Sure Hank Done It This Way' and Spice 1's '187 Proof'



GTA V's first DLC expansion. "Last one standing – again," he growls, and for a minute you're not sure whether he's talking about fighting or drinking. After another look at his crunched, manic face, you figure it's probably both. He walks to the water's edge, jumps in a motorised dinghy and sets off up the coast, his vessel buffeted by overhauled water physics. Trevor dons some scuba gear stashed in the boat, and dives below the surface. We're not sure what purpose underwater sections will serve in the full game, but it sure is pretty down here. Shafts of sunlight refracted by the waves above illuminate a seabed that's teeming with life. We swim round the bow of a sunken ship right into a couple of circling sharks – dangerous enough to warrant their own icons on the radar, but tamed for demo purposes. The point, it seems, is that the sea is now as alive and dangerous as the land. The days when contact with GTA's water meant instant death suddenly seem a long time ago.

What we've seen so far is clearly designed to showcase the extent to which GTA has

moved on from San Andreas's barren sprawl and Vice City's lifeless, fatal water. But what we – and the tens of millions who will buy a new *Grand Theft Auto* game on sight come September – are really here for is the city. Yet as Michael steps out of the Von Crastenburg hotel and walks up the street, it's not his surroundings our eyes are drawn to, but his gait. One look at Michael's walk and you know he's a tough guy, albeit one who's getting on a bit. And when he breaks into a sprint – or what passes for one, at least – it's clear he's been taking it easy during retirement.

Vinewood has clearly been prepared for our arrival. We're introduced to a new character, a weedy superhero called Impotent Rage, who's loitering in full costume outside a building. A few yards away is a Republican Space Ranger, confirming the return of GTA V's cartoon satire on neoconservative imperialism. The city's not that busy at the moment, but that will come. Five months from release, it's not surprising that we don't lay eyes on more than a dozen vehicles at



ABOVE Gunplay has the weight of *Max Payne 3*, but Rockstar promises further improvements, including a 'combat jog' that lets you move at speed with your weapon out, but not raised



www.bit.ly/ZkSpgc
Screenshot gallery



ABOVE Don't expect to spend all your heist cash on fast cars – you'll be able to buy property and even local businesses, the latter contributing some of their profits to your war chest



once, but it's already a Rockstar city. The idle chatter of passersby; the blue-eyed '80s soul pumping from the speakers of a passing car; a drunken demand for attention from a faded Vinewood actress teetering in her stilettos on a street corner. There's the odd glimpse, too, of the local business names and advertising slogans that have long raised the suspicion Rockstar must employ people solely to come up with puns. The world may not be dense with cars and people just yet, but it's rich in detail. In colour, too: there's nothing quite like neon at nighttime, and there's a dramatic use of light and shadow that recalls the ENB graphics mod that has kept *Grand Theft Auto IV* looking remarkable to this day.

We spot a question-mark icon on the map that denotes a *Red Dead*-style dynamic event. Michael jogs down an alley to find a starlet cowering behind a truck, hiding from some paparazzi. As we discover after he's fetched her car and collected her, they are rather aggressive. They give chase, and this first glimpse of *GTA V*'s vehicle handling suggests it's more forgiving than the exacting system

its predecessor employed. With our tail lost, we drop our passenger at her home and are paid for our troubles – a miserly \$150.

For the real money, we'll need to gather a crew for a heist. *Grand Theft Auto V* is built around these big jobs, and they're the real reason, we suspect, for the three switchable protagonists. Heists lend a brisker feel to the standard *GTA* mission structure and pacing. They'll require planning and preparation – and not just a brief to and fro to gather the requisite equipment. You'll hire and manage a supporting crew, and you'll have to split the takings with those who survive.

There is freedom here, but Rockstar tightens its hold on the reins when it comes to character switching. You'll only be able to change at will when a menu overlay appears in the bottom corner, and a lot of the transitions are made automatically. The alternative, a text prompt telling you to switch to a character you knew you'd have to switch to anyway, would be needless friction, but we're keen to see just how freely we'll be allowed to approach the big jobs in the final game.



GTAV

RIGHT The urban grit of Liberty City was a sight to behold, but moving the game back to the West Coast has done wonders for *Grand Theft Auto's* colour palette. Will the game be as light in tone as it is to look at?



The mission that concludes our demo is one of the smaller heists, with no crew involved and the prep work already done. Convening at a truck stop out of town, the trio run through the plan on Michael's smartphone, don masks – a skeleton, an ice hockey goalie, and a monkey smoking a cigar – and set off. Reaching our destination, Trevor and Franklin take up their positions while we, as Michael, block the road with a refuse truck. When our target, a Gruppe 6 security van ("Putting the U in secure"), comes to a stop, we switch to Franklin; we're behind the wheel of another vehicle and approaching at speed. In firstperson view, we ram the security van onto its side and through a wall, blow the back door off with a sticky bomb and take its cargo just as the police, tipped off by silent alarm, arrive in droves.

The shooting begins, and the most immediate comparison is *Max Payne 3*. It's certainly Payne's turning circle instead of Niko Bellic's, and his kill-confirming reticule X, too. There's constant chatter between the three protagonists – Franklin sticking behind cover with self-preservation his only apparent goal, Michael running and gunning like an old pro, and Trevor up above on overwatch – with the action switching as required. Trevor has



Our demo was accompanied by confirmation that GTAV will feature what Rockstar says is a "brand new approach to open-world multiplayer"

the most fun, sniping an enemy team setting up across the street before switching to an RPG to take out police choppers and cars, and barely taking a scratch. Michael, though, is taking more than his fair share of hits as he moves from cover to cover, and it's here, as that dynamic score hits its throbbing Krautrock peak, that we suddenly realise that this is the first *Grand Theft Auto* game with

regenerating health. This, as much as any of the more conspicuous changes and additions, shows how the series has moved on. For all the detail of its remarkable world, some of GTAV's foibles felt like hangovers from the PS2 era, but it's clear that Rockstar's work in the sequel leaves few stones unturned.

Grand Theft Auto V's world is vast, but Rockstar's mission isn't to make its biggest-ever landmass, but the ultimate open-world game; that means it needs mechanics as refined as its world, and distractions worthy of those mechanics. First impressions are dazzling, but the real measure of GTAV's success will lie in how its disparate elements – these three characters with their different tastes and skills; the heists; the air, land and sea – work together. Because that's a lot to fit into a coherent whole, no matter how large the world map that contains it. ■

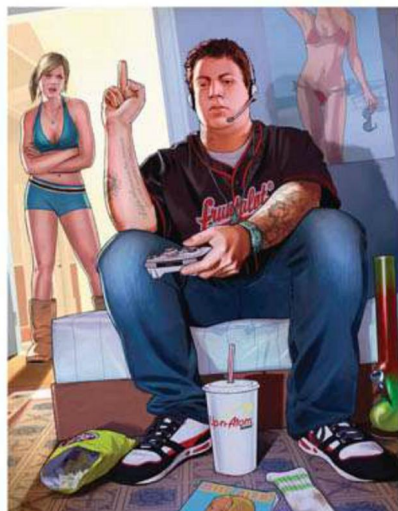
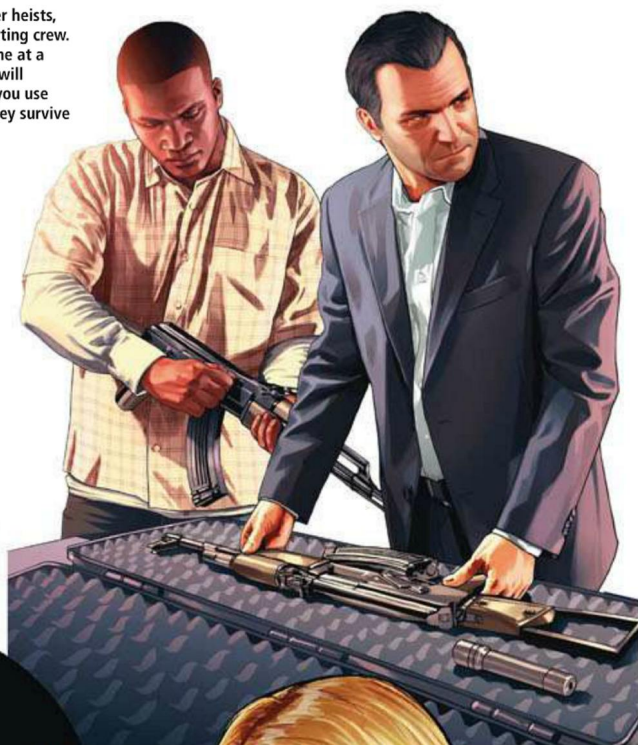


Personal effects

Each of the three playable characters has their own particular skillset, with statistics measuring stamina, lung capacity, strength and stealth. Flying, driving and shooting skill will also differ. Like *Skyrim*, skills will improve as you use them, with new tools and boosts unlocked as you go. Each character has a special move, too: Franklin can slow down time when driving in order to safely take corners at high speeds (a nod to *Midnight Club LA*), while planning maestro Michael can do similar in shootouts. Trevor, our resident headcase, can activate a rage mode of sorts, during which he'll deal out double damage and take less himself.



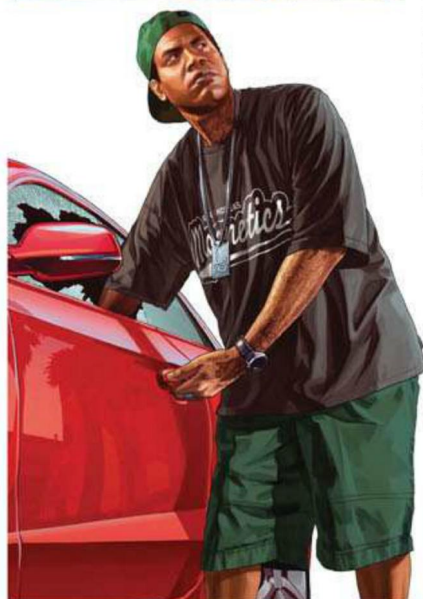
RIGHT For the bigger heists, you'll hire a supporting crew. The less skilled come at a cheaper price, and will improve the more you use them – provided they survive



Design showcase

From picking heist masks to getting new ink, GTAIV's well-drawn protagonists are an adaptable bunch

BELOW Dogs will feature, and they're sure to be more than a cut-and-paste job from *Red Dead*'s asset library. We're rather hoping to be able to use them for heists, in fact. BELOW LEFT Customisation is a key theme, heralding the return of *San Andreas*'s tattoos and haircuts. Pay 'N' Sprays can now be used to tune up vehicles, while guns can be improved with silencers, scopes and sights



Rockstar says that smartphones will be as important to the game's protagonists as they have become in modern life. Given the frequency of *GTAIV*'s cellular interruptions, could we see the introduction of an aeroplane mode?

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While you start as Dracula in this muscular form, he'll soon end up a withered shell of his former self. Restoring a character to full power is common enough in games, but knowing this is building up to his death adds a fresh wrinkle

H | Y
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CASTLEVANIA: LORDS OF SHADOW 2

Dracula's on a mission from God in this titanic overhaul for the series

Publisher	Konami
Developer	MercurySteam
Format	360, PS3
Origin	Spain
Release	2013

Lords Of Shadow's brief history is as bold as it is bizarre. MercurySteam's reboot of the series began by ignoring ten centuries of established *Castlevania* continuity and was controversial enough within Konami that it required Hideo Kojima's seal of approval to shepherd it through production. The game's ending saw the hero revealed as Dracula, a twist explained months later in two largely unpopular downloadable episodes, which producer **Dave Cox** would describe as "a mistake". Further critical plot points appeared only in a sequel that was available exclusively on 3DS, despite the original game appearing on PS3 and 360. Now the third *Lords Of Shadow* — of course named *Lords Of Shadow 2* — casts players as Gabriel-Belmont-turned-Dracula, God's chosen warrior in a war against Satan conducted here in the 21st century. Is nothing about *Castlevania* sacred?

"Hell, no," says Cox. "We needed to make a change, so we did. The *Castlevania* series wasn't going anywhere, sales were dwindling and it was appealing only to a very small hardcore base of fans. That's how franchises die. The success of [*Lords Of Shadow*] proved to everyone that there's life in the series yet and that people could accept us going in a new direction, and we can do that again. We have to take these risks if *Castlevania* is to survive, otherwise it's just going to be like *Mega Man*."

In a way, the *Lords Of Shadow* trilogy has mimicked the evolution of *Castlevania*, but on its own greatly accelerated timeline. Where the first game was a linear whip-and-dagger slasher in the style of the NES and SNES games, *Lords Of Shadow 2* is a gear-gated open-world adventure that has more in common with the game that put the 'vania' into Metroidvania, *Symphony Of The Night*.

Lords Of Shadow 2 begins centuries ago with a glib throwback to Dracula's most famous line ("What is a man? A miserable

Where the first game was a slasher, LOS2 is a gear-gated open-world adventure

little pile of secrets"), a siege on his castle by the Brotherhood Of Light's cross-bearing armies, and a fight against a titan several times larger than anything Belmont fought in the first game. It's an entire stage in itself. Dracula climbs up the chrome-plated mechanical man, fighting enemies with his full suite of vampiric abilities and using enemy fire to shatter the bolts holding the machine together. As sheets of armour fall away, new paths open up and he climbs between spinning cogs and clanking gears



CASTLEVANIA: LORDS OF SHADOW 2

BELOW Beneath all the fancy golden armour, this warrior is revealed to be just an ordinary man. When he's beaten, he cowers in fear of Dracula, whose reputation for evil precedes him



The addition of two new weapons adds depth to the combo system and offers room for creativity, while mastery rewards encourage players to explore the full extent of Dracula's abilities



on his way to the magical gem animating the monster from atop its shoulders.

This is a Dracula at the height of his powers, with access to his health-leeching Void Sword and armour-breaking Chaos Claw as well as the default Bloodwhip, which takes the place of Belmont's Combat Cross. But that's not to say the vampire shares the same weakness to holy objects as Bram Stoker's creation. You are not, as some might fear, the bad guy. To prove it, Dracula grips a crucifix near the prologue's end and explains that holy weapons cannot destroy him, because he is, in fact, God's chosen one.

But perhaps a century has passed since the events of *Lords Of Shadow*, so this is also a weary Dracula, a creature tired of immortality and of the constant attention of holy warriors, but forced to wait for the moment when he'll be needed. It's a shame the message about his divine patronage hasn't reached his son, Alucard, who fights on the side of the armies raised against Dracula and finishes this introductory section by slaying the vampire lord, stripping him of his powers and putting

him to sleep for centuries. And so our protagonist awakens withered and emaciated in the 21st century to find Satan on the verge of conquering Earth, which is exactly where *Lords Of Shadow* left off in its epilogue.

"We pay a lot of attention to the progression of the player," says creative director **Enric Álvarez**. "We left people with an insane cliffhanger at the end of *Lords Of Shadow*, and lots of people just want to enjoy the story again. At the same time, we want to do some things differently, so we're giving people more freedom to re-explore the world and find new areas, and this is a big change for us. *Lords Of Shadow's* world was cool, but it was separated into artificial levels; that's a common thing for videogames and people accept it, but this time we knew we wanted a more organic game. That means a game with no loading times, where you can go from one side of the world to the other at any point. It meant we had to completely redesign the engine to retain our production values and our incredibly high memory consumption



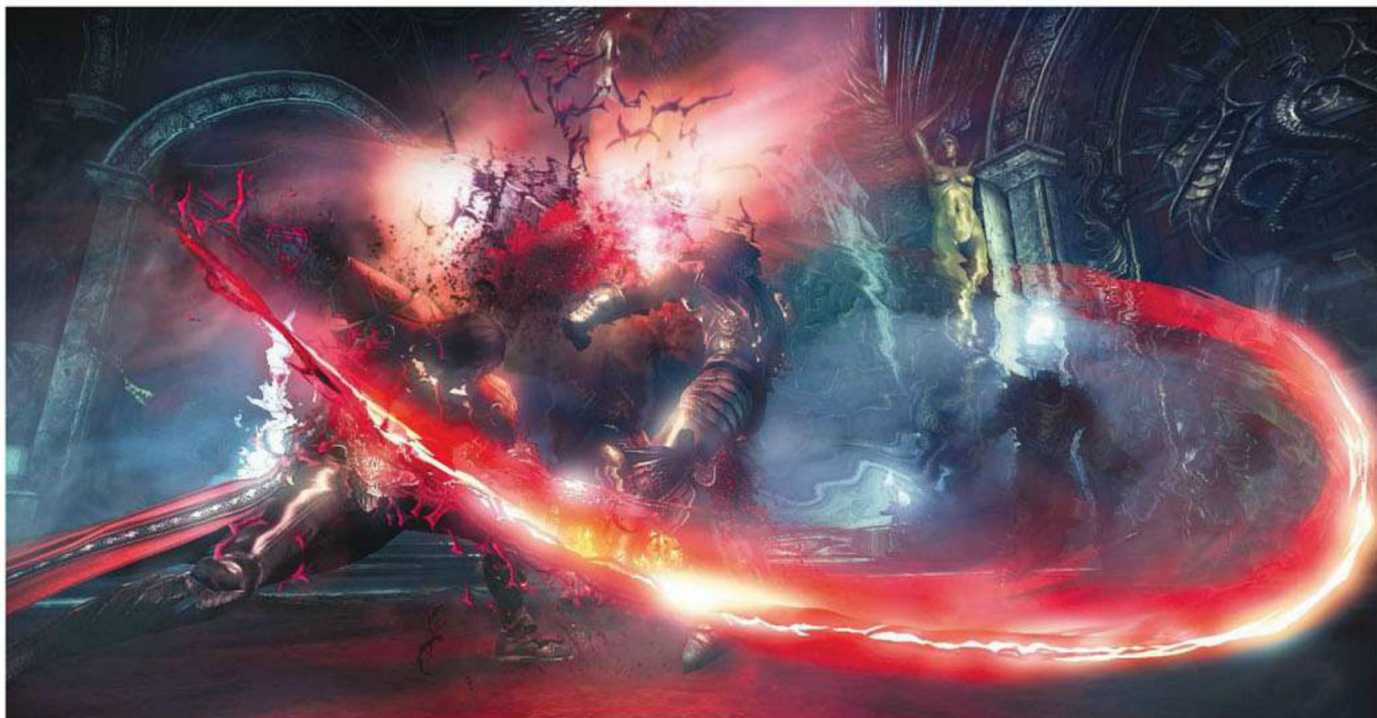
and still handle streaming and freedom of movement. It was very difficult."

More difficult still was designing the world and the mechanics Dracula uses to explore it. Camera control has been handed to the player – at the cost of further stress on that new engine – and Dracula's three vampiric weapons have added depth to the original's simple combat system (see 'Mastery of the universe'). The platforming has also



Mastery of the universe

Lords Of Shadow 2 keeps combat simple with two attacks and a grab, but with the health-draining Void Sword and armour-shattering Chaos Claw accessible mid-combo, Dracula has more options than Gabriel Belmont ever did. For each weapon there is a series of unlockable combinations, and repeated use raises your 'mastery' over that combo. This is MercurySteam's answer to the problem of players mashing their way through the game, rewarding those prepared to dig deeper. Accrue enough mastery to unlock perks for each weapon, such as leeching more health with the sword or tearing through armour faster with that claw.



ABOVE Dracula's Bloodwhip replaces the first game's Combat Cross but functions in a similar way. True to form, the vampire can drain blood from his enemies, but he can then channel it into his sword or claws

been improved, less as an obligation to *Castlevania*'s legacy and more as a vital tool to explore Dracula's ruined castle and navigate the walking puzzles that are *Lords Of Shadow*'s titan fights. And then there's the city – the first modern metropolis to appear in any 3D *Castlevania* – which is surely *Lords Of Shadow 2*'s best chance to infuriate *Castlevania* fans.

Lords Of Shadow was a colossal game; its sequel will be even larger and longer

Álvarez puffs out his cheeks when asked about the challenges of designing the Gothic cityscape that accounts for half the game's world. "Well," he says, "that's something we could sit down with a beer and talk about for hours. It was a huge challenge. A huge challenge. We struggled with it for a long time, and yes, it's a modern city, but we're making it a *Castlevania* city as best we can."

There's a slide in the studio's presentation that Álvarez highlights as being "the first vision of the city" after countless failed attempts. The look is modern and steely but dark and fantastical – it's Chicago by way of *Bayonetta*'s Vigris, with pseudo-Medieval growths erupting from every surface.

"This is not New York," says Cox. "This is a city we've designed to be very much in keeping with the *Castlevania* universe. You're going to see Gothic architecture, gargoyles, stained-glass windows. It's a unique world."

The game's castle and city hubs occupy exactly the same footprint – two vast circles into which MercurySteam has crammed a world's worth of variety. A quick glance at the maps over a designer's shoulder reveals towering spires, treacherous cliffs, dense woodland and suspicious open spaces, which seem all too welcoming for another titan boss fight. It's not just a large world, but a world so dauntingly huge that you can't help but pity the team tasked with filling it with content. *Lords Of Shadow* was a colossal game; its sequel will be even larger and longer.

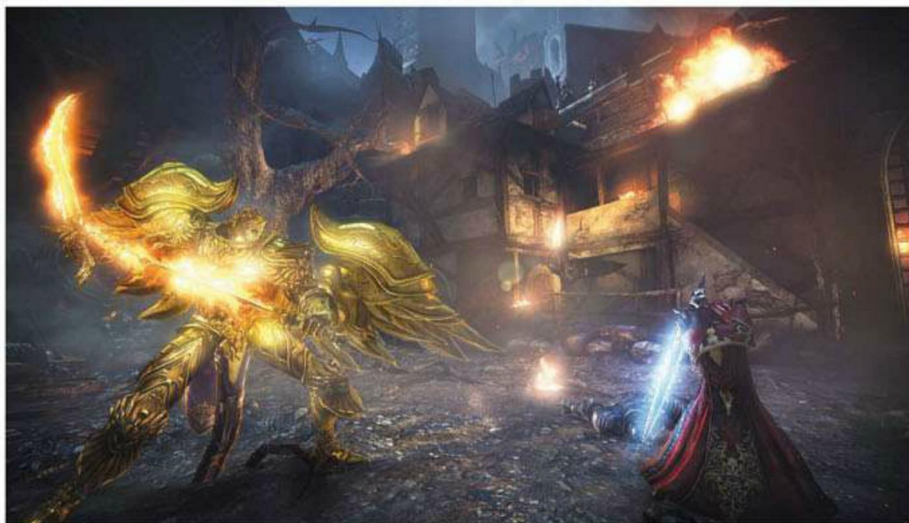


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Screenshot gallery



CASTLEVANIA: LORDS OF SHADOW 2

The golden knight Dracula fights at the end of the prologue chapter combines his swords to form a bow or glaive. He's a formidable opponent on harder settings, despite arriving so early in the game



"Every two minutes there's something new," says Álvarez. "There will be a new enemy, a new environment, a new boss, a new something. It's Hell on Earth for us, because the more unique stuff we put in the game, the more unique stuff you have to make. It's a nightmare, but at the same time you feel confident [that] people will appreciate it. We're always trying things that are different and people have responded."

The response to the first game in 2010 made it Konami's most successful title in North America that year and its second most successful game in Europe, where *Pro Evolution Soccer* is always its top seller.

Dracula will cut a deal with Death, defeat Satan, and wrap up all the loose ends

Castlevania has returned to be one of Konami's strongest brands, so *Lords Of Shadow 2*'s final sacrilegious act, which isn't another kick in the lore or yet another fan-baiting distortion of a famous character's origin, comes as a surprise. It marks an ending. Contrary to all modern videogame series logic, *Lords Of Shadow 2* finishes the trilogy and its story with a full stop. If MercurySteam works on a next-generation



Castlevania, it'll have to be with a new Belmont, a new Dracula and a whole new world. In *Lords Of Shadow 2*, Dracula will cut a deal with Death, defeat Satan, presumably make peace with his son and wrap up all the trilogy's loose ends. Going from start to finish in three years is surely a record for a successful series, and for MercurySteam *Castlevania* has been a remarkable success.

"We trusted in a quite simple idea: that people will recognise and reward quality and care," says Álvarez. "I think that this is the best for the new one as well. Whether it sells or not may be based on any number of things, but all we can do is put an honest and surprising game on the table. If you make a game that treats players with respect, a game where you're not going to play a trick on them with a few spectacular sections and make the rest of the game super-generic, a game that's honest, [then] that's the best you can do." ■

Q&A Enric Álvarez Creative director, MercurySteam



How difficult was it to build a modern city to fit a *Castlevania* game?

At the start, and for a long time, we were struggling to get a clear image of the city we were trying to build. Even among our artists, there were many different perspectives on what it should look like. For me as a game director, it was very difficult, because I didn't feel we were even close to what we needed. A castle is a castle, and while it's difficult to make it right for a game, everybody has a clear image of what it can be. But a modern city that's built on the ruins of Dracula's castle? We were stuck until one of our best artists drew a roundabout with archways across the street and towers in the distance. It was a city crowded by skyscrapers, but if you looked across the skyline, it looked like a castle. Instead of trying to build a city like, say, *GTA's*, where you feel free and can see the whole thing at once, we went the other way and imagined it as if it were a castle – room by room. It's a very open space, but you're going to feel enclosed and surrounded by high walls. There are streets that feel like ballrooms.

Did the city create any game or level design challenges?

It's very difficult to create a dark game... you need to be able to see your character and your enemies. Given that the game is really dark and you play at nighttime, that was a challenge. And from day one, one of the things we wanted to avoid was the feeling that you're in the middle of a fake, empty city that we threw a few monsters in. The city has to be connected to what happens there – to the enemies, to the story, to the characters – and that became quite an obsession. We didn't want a series of combat arenas where the city is irrelevant.

MercurySteam has a very large 2D art team, particularly for the size of the studio. How does that inform your work?

In this generation, and especially in the next generation, textures are a complex business. You have to fully understand how the engine works to take advantage of the realtime lighting and pre-baked radiosity and so on. Our artists have to understand the engine so well, or you can end up with a blue texture looking brown just because of how the light is hitting it in one part of the game. Ninety percent of what you see in a game is pure texture, so it's important for us to have that many texture artists. Each texture now is taking three or four times the amount of time it took to make textures at the start of the generation.



ABOVE A century after *Lords Of Shadow*, Belmont starts the sequel with all the arrogance and grandeur of an immortal in a world where he is everyone's elder. He carries himself with a theatrical flair that's reflected in his costume



Design showcase

Stone and stained glass meets steel and cement in *Lords Of Shadow 2*'s Gothic present



ABOVE Designs for Dracula's castle and the city in the future both feature the same Gothic stylings, as if the castle's influence has seeped into the buildings. Squint a little and the modern skyline resembles the spires and battlements of an ancient fortress. LEFT The titanic war machine unleashed on Dracula's castle by the Brotherhood Of Light is responsible for a great deal of the damage that forces Belmont into platforming mode in the castle-based half of *Lords Of Shadow 2*



While the isometric viewpoint and Logan Cunningham's narration invite immediate comparison with Supergiant's debut game, *Transistor's* female protagonist, Red, could hardly look more different to *Bastion's* The Kid





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P | E

TRANSISTOR

Its legacy is obvious, but *Bastion*'s follow-up has a voice of its own

Publisher	TBC
Developer	Supergiant Games
Format	TBC
Origin	US
Release	2014

You can tell immediately that *Transistor* is a Supergiant game, which is some achievement given that this is only the studio's second release. It's got a new protagonist, a new setting, and a different combat system, but there's clear connective tissue between *Transistor* and *Bastion*. Indeed, there must have been the temptation to just make another *Bastion* — not many indie debuts sell 1.7 million copies, after all. Instead, creative director **Greg Kasavin** tells us, the studio took what it had explored in *Bastion* as the starting point for its next game.

"At the end of *Bastion*, we sat down and discussed our preoccupations as individuals," he says. "What are the things we care about? Having worked on *Bastion*, what are the things we want to explore further? And that was completely open-ended as a subject, whether it was a narrative idea, a gameplay mechanic, or a stylistic thing. We put it all down on a board and talked about it, fought about it, and eventually it starts to turn into something. Fighting is healthy: our creative chemistry is sort of our most important resource."

The team — which was comprised of seven people when the first game shipped and is up to ten now — found common ground in the

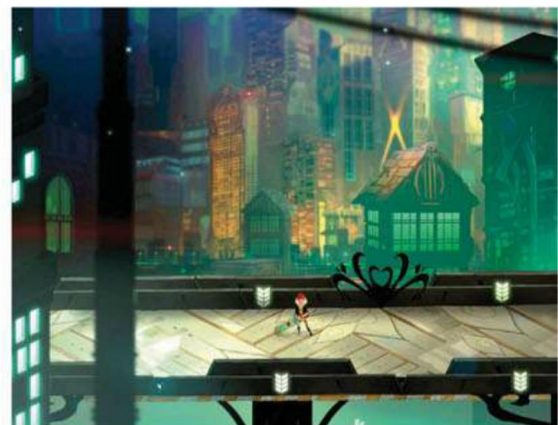


TRANSISTOR

BELOW The demo closes with Red fleeing on a motorbike as the Cunningham-voiced sword, the titular Transistor, warns of the challenge to come. "Whatever you're thinking, do me a favour," he says. "Don't let go"



The off-white pillars of cover are destructible, broken both by enemy fire and the pneumatic-drill-like legs of this foe. There's genuine tension as you scramble from one piece of cover to the next



pleasure of having created a world from scratch, and discussed how it might do so again. In time, *Bastion's* fantasy setting became *Transistor's* sci-fi. That is, of course, almost as well-trodden a videogame road as fantasy, and Kasavin notes that the studio was conscious of not going up against "cyberpunk games like *Deus Ex: Human Revolution*, or a far-future game like *Mass Effect 2* or *3*. They're already great for what they are; we wanted to find our own identity within that kind of space."

That identity has been driven particularly by Jen Zee, Supergiant's art director, who joined the studio just as *Bastion* was entering production. As such, Kasavin admits, she "had to make do with a lot of decisions that had already been made". *Bastion's* whiff of the Old West contrasted with its fantasy setting, and *Transistor* is another stylistic mash-up. It's science fiction, sure, but with an art nouveau spin that owes as much to Secessionist Gustav Klimt and Alphonse Mucha as it does Moebius. "Our

word for it internally is a romanticised setting. This romanticised, vintage look [with] gold sequins, bold shapes. When I think about classic America, people were so well dressed, so polished. We liked the look of an anachronistic world where you can't quite place the period in time."

Much of that comes from Red, the game's protagonist, a flame-haired superstar singer in a gold dress and a feather collar. She awakens after an attack on her life to find that her voice has been stolen and a sword – the Transistor – is calling to her, voiced by *Bastion* narrator Logan Cunningham. It's more connective tissue with Supergiant's debut, sure, but this is no mere reprisal. "From my point of view, as the writer on the project, it's a very, very different challenge," Kasavin says. "Instead of an omniscient narrator spoon-feeding you information, it's this unusual character who's physically with you, discovering what's going on in this world. He's trapped inside of this unusual sword. Developing this relationship between a woman who's been denied her voice and a

man who has been reduced to a voice is exciting to me narratively."

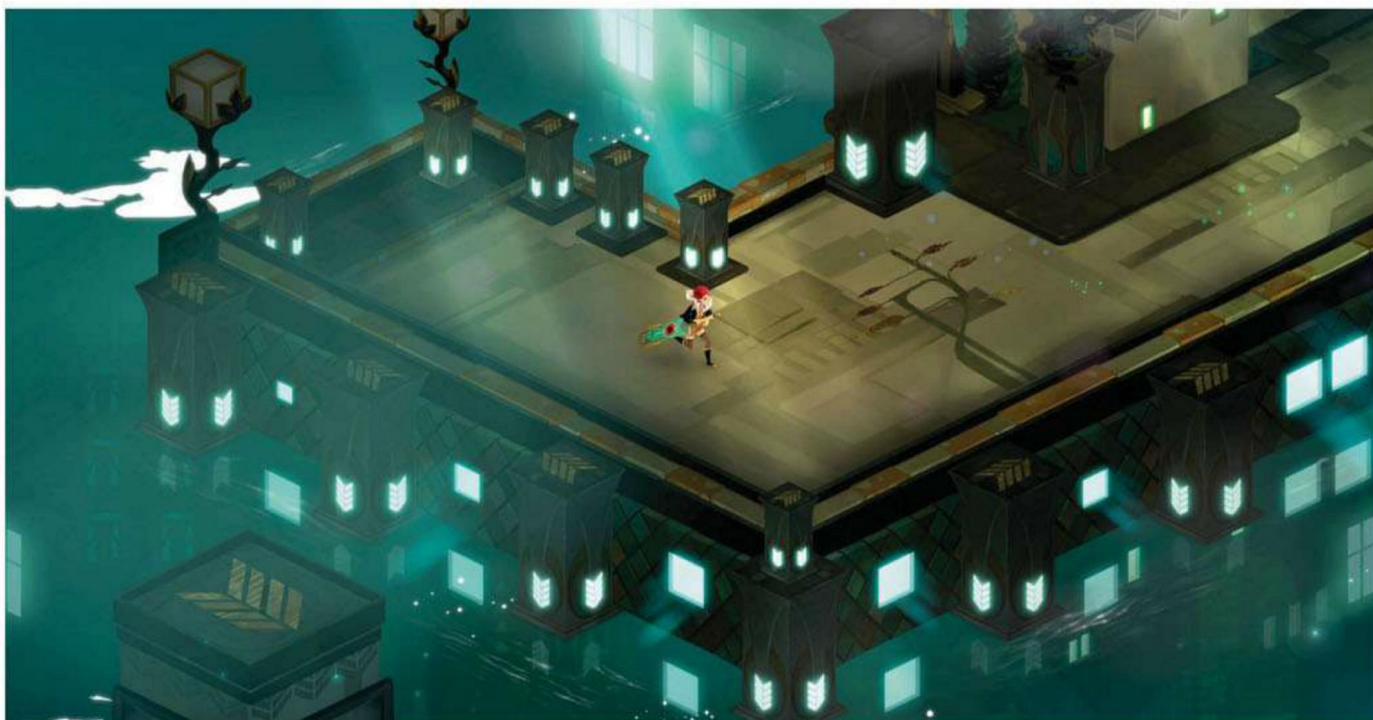
It also fosters a depth of connection between player and sword that *Bastion's* Kid and narrator never really had. Red and the Transistor are mutually interdependent: he does the talking she can't do, and she does the killing for him. Like everything else, the combat system is clearly the work of the people behind *Bastion*, but while the Kid in battle was largely reactive – always moving, deflecting projectiles, and rolling to safety – Red's is a more proactive role, and a more methodical one, too. Our demo has us controlling the game via a 360 pad. Squeeze the right trigger and time freezes, enabling you to dash round the screen and line up a few strikes, with onscreen text showing how much damage each attack will do (*Dark Souls* fans will be pleased to hear there's a bonus for backstabs). Another squeeze of RT and the action resumes, Red acting out your plan automatically. A meter at the top of the screen limits how much you can move around and how many blows you can land; there's a

Transistor's PAX East demo is set in the game's opening moments, but gives players a full moveset in the space of 15 minutes. Kasavin admits this will change in the final game, but likes the idea of "a game where you get the ultimate weapon right at the beginning"



In control

Bastion debuted as an XBLA title, but would go on to be released on PC, Mac and Google Chrome. It was a surprising success on iPad, too, its controls smartly retooled for touchscreens, and Kasavin says that working with different control schemes is a focus. "We think our longevity, our survival as a studio, hinges on our ability to be able to make games for different input devices, because we don't know what people are going to be playing games on in another year or two. For all I know, they'll be controlling games with their brains. I don't want us to get stuck only knowing how to make games for controllers."



ABOVE LEFT This brief side-scrolling section is barely interactive, but does suggest that Supergiant is willing to break with its established traditions. "We don't want it to come across as just nudging, winking references to *Bastion*," Kasavin says

cooldown before you can use it again, so your only option is to stay out of trouble, making use of the destructible white pillars that dot the streets of this sci-fi cityscape. This, then, is a sort of turn-based combat played out in realtime, one that makes players impossibly powerful one moment and has them cowering helplessly the next.

"With *Bastion*, our focus was on playing with finesse; there's a lot of timing-based, reactive interactions," Kasavin says. "Here we wanted more drama and suspense, and a deliberate mode of play. We love a lot of older turn-based tactical games, but we also like the immediate feel of action games. So we were like, 'Can we combine all those sensations into one? Can we make a game where it's not stopping you, but you're stopping it at your leisure?'"

We're barely halfway through our 15-minute demo before we have a full complement of abilities. While Kasavin admits the pace of unlocks will probably be different in the final game, giving players the

best tools early on is a conscious decision. "We give you this extraordinarily powerful weapon right from the start. It's got all these powerful abilities, but now we have to introduce encounters with enemies that are very fast and can retaliate very ferociously. It really changed the way that we approached designing these encounters, and that's felt really good — we feel like we're exploring new territory with it."

For such a polished and conceptually complete game, *Transistor* is frustratingly far off, with Supergiant committing only to a vague 2014 release date and platforms still to be determined. Kasavin says he's "extremely excited" by the prospect of new consoles, but won't be drawn on where he'd like to see *Transistor* first. "We're not even really in discussions at this point. The game isn't going to be out until early next year, based on our plan, so we feel like we have a good amount of time to figure out what's going to be the right platform for it. The project is self-funded, just like *Bastion* was. Our first priority is to make the best game possible." ■

H | Y
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HEARTHSTONE: HEROES OF WARCRAFT

Blizzard tips its hand on its first
free-to-play game and iPad debut

Publisher	Blizzard Entertainment
Developer	In-house
Format	iOS, Mac, PC
Origin	US
Release	2013

On the face of it, Blizzard has been slow to adapt to the rise of mobile and free-to-play, just like parent company Activision. Fellow industry leaders EA and Ubisoft moved quickly to embrace emerging platforms and business models, but for Activision Blizzard 'mobile' often meant companion apps for *World Of Warcraft* and matchmaking platform Battlenet, or the now free *Call Of Duty* subscription service, Elite. *Hearthstone: Heroes Of Warcraft*, a collectible card game set in the *World Of Warcraft* universe, is Blizzard's first free-to-play game. Soon after its launch on PC and Mac, it will become its first iPad game, too.

Yet *Hearthstone* should not be seen as a rushed bid to hitch the studio to two lucrative bandwagons. It's been in development for over two years, and is being made by Team 5, a new 15-strong unit of multidisciplinary staff assembled specifically to make games like this. Its mandate is to make smaller projects that can be iterated on rapidly and released in distinctly un-Blizzard-like time frames. CEO Rob Pardo promised his PAX East audience that when he said the game would be on iPad soon after PC and Mac, he meant this year, not 'Blizzard soon'. Pardo made it quite clear that his studio's love of collectible card games predated the rise of mobile and free-to-play, his claim backed up by some grainy photos of

badly coiffed developers sitting cross-legged on office floors playing *Magic: The Gathering*.

"When we're making a game, we try to figure out what the business model is and the platforms are after we know what kind of game we're making," **Eric Dodds**, the game's lead designer, tells us. "We're excited about card games, so free-to-play makes a lot of sense. One of the things we wanted to capture with this game is for you to feel like you're touching the cards, and of course, for an iPad game that makes a whole lot of sense."

***Cards aren't just played,
they're slammed down,
kicking up little dust clouds***

Both the early iPad build shown behind closed doors at PAX and the PC version playable on the show floor have a tactile quality to them, meaning everything looks, sounds and feels like it has weight. Cards aren't just played, they're slammed down, kicking up little dust clouds as they land. Send a card out to attack another and it moves towards its target, pausing above it for a split second before lunging in to strike, the resulting damage counters enveloped by cartoonish hit sparks. Move a card from left to

right before playing it and it tilts slightly; it's barely noticeable, but adds to the sense that you're playing with a real, physical deck.

You can also tell you're playing a *Warcraft* game. There's the nine-strong cast of heroes based on *WOW*'s playable classes, the beasts and minions you send into battle borrowed from existing art libraries, and familiar battle cries and sound effects. Everything, right down to the game board itself, has the same pleasingly chunky look as its MMOG cousin, but art alone can't anchor a game in the *WOW* universe. That takes being easy enough for total beginners to pick up while retaining sufficient high-end complexity to keep hardcore players happy for hundreds of hours.

"That's our core Blizzard philosophy," says production director **Jason Chayes**. "We definitely always think about how to have something that's easy to learn but difficult to master. That's a common thread, whether it's *StarCraft* or *Diablo* or *World Of Warcraft*, through all our titles, and we're trying to capture that in *Hearthstone*."

Key to that low-level accessibility is the bright green outline that highlights your available moves, and enshrouds the End Turn button to let you know when you've done all you can. The long-game complexity will come from building custom decks. Bridging the



Setting *Hearthstone* in such a recognisable universe as *World Of Warcraft*'s will go a long way in achieving the strong start that's essential for free-to-play games. A coveted featured slot on the App Store seems a certainty



HEARTHSTONE: HEROES OF WARCRAFT

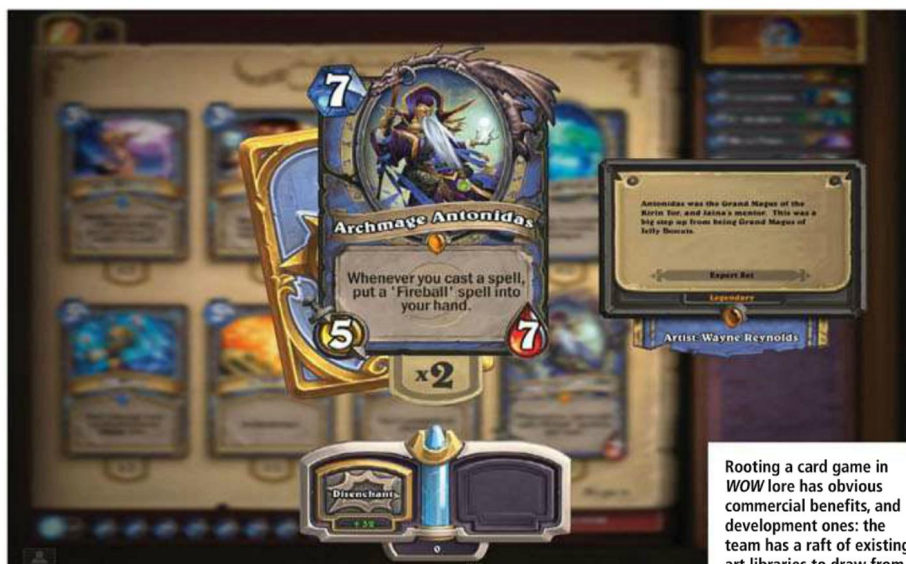
A key development theme has involved making the player feel like they're handling physical cards, but any pretence at realism is dropped the minute a card is played and cartoonish sparks fly across the screen



gap between low- and high-level play will be a recommendations system that suggests a selection of cards to help the inexperienced make balanced decks.

There's no deck building in our demo. We're playing with standard preset decks, so the best prospect for tactical variety lies in our choice of hero. We'll start with 30 health points no matter which one we choose, but the difference isn't purely cosmetic: each has a different power that can be used once per turn. The Hunter's Steady Shot will deal two points of damage to the enemy hero, while the Priest's Lesser Heal replenishes two HP instead. Other heroes can give temporary stat boosts, or summon extra minions.

With no control over our deck's contents, some match-ups do feel one-sided, while others are decided purely by drawing the right card at the perfect moment. Yet there's already a good flow to the matches, which tend to last for around ten minutes. You're bound by your limited stock of Mana, which governs how much you can do in a single turn. You start the game with just one point of Mana, but that increases by one and your stock is replenished at the beginning of every turn. This means that early on you have to make do with meagre resources, relying on hero powers and low-level cards. The player



Rooting a card game in *WoW* lore has obvious commercial benefits, and development ones: the team has a raft of existing art libraries to draw from

who pulls into the lead will do so because they have an ample stock of spells and minions that only cost one or two Mana; chances are his opponent's hand contains more powerful, costlier cards. By the sixth or seventh turn, however, those big guns will be coming out. And even when you manage to build up what seems like a commanding lead, your opponent needs only one good card, or

for you to make a single mistake, for the pendulum to swing the other way. Even at this early alpha stage, it rarely feels unfair.

Blizzard's claim that *Hearthstone's* design predated discussions about platforms and business models appears to have some weight, but a free-to-play game needs a good business model, and this one is modelled along the lines of a collectible card game. Packs of five cards can be earned through play or bought, and while pricing is yet to be nailed down, Blizzard expects to charge around a dollar per pack. There will be no trading between players and no real-money auction house, either. The latter point in particular seems odd at first, given the opportunity for Blizzard to take a cut of every sale. Will players really continue to pay up for cards when they're only after a handful of



Ill communication

World Of Warcraft players may be disappointed to find there's no free text chat in *Hearthstone* at launch, though Battlenet friends can swap messages. Player communication is thus limited to a choice of six emotes, selected by right-clicking on your hero: 'greetings', 'well played', 'thanks', 'sorry', 'threaten', and our favourite, 'oops'. It feels like a decision born of the desire to keep *Hearthstone* accessible. And, as always with these things, they're best when used inappropriately: saying 'well played', perhaps, when your foe makes a mistake, or in our case, using 'threaten' just before our opponent lands a killing blow.



Monetisation is a new challenge for Blizzard. The crafting system, which lets you break down duplicate cards and make the ones you want, seems key. Every card, no matter how common, is of value

Q&A Jason Chayes

Production director,
Blizzard



What was the thinking behind the formation of Team 5? Were the team members all existing Blizzard staff?

It's a pretty even split. We really wanted to make sure that, above all, it was a good cross-disciplinary team. People who were doing coding work were also doing design, and in certain cases also doing art – wearing two or three different hats at the same time. A really important part of our mandate, our mission, is we want to iterate on games really quickly. For us to be a small, nimble team, getting games out to our players and our fanbase faster is an important goal.

What were the biggest challenges you faced early on?

A lot of people at Blizzard, when we first said this was something we wanted to do, were like, 'Oh, OK, that's awesome, but it's not really the kind of game I like to play. It's too complicated. It requires a lot of investment.' We really took that to heart... We think there's an awesome game out there that could be much more accessible. How do we take that very complicated genre and make it so that anybody can pick it up and play?

Why have you decided against letting players trade cards?

Trading's definitely a cool idea, and something a lot of other games in the genre support, but for *Hearthstone* we didn't think it made as much sense. We really wanted to keep this very accessible, and one of the challenges of trading is that I don't always necessarily know what my cards are worth. Somebody could potentially take advantage of that.

F2P is all about tweaking after release. What do you expect to focus most on?

Prior to launch, we really want to get the balance right – we're in pretty good shape now, but there'll be more, obviously. Post-launch, it depends on how the game evolves; we could focus on adding more multiplayer modes, or maybe more singleplayer content. We think this speaks well to eSports, too.

You're finally on mobile, and back on consoles with *Diablo III*. What does this say about the evolution of Blizzard?

I think the biggest thing it says is that we'll go wherever our fans are interested in seeing Blizzard titles. By no means does this mean we're moving away from PC – that's still our bread and butter – but we think there are other opportunities out there. That's our charter: how do we begin to explore these other ways to play awesome games?



Blizzard obsesses with making games accessible, and newcomers are guided through *Hearthstone* by a bright green shroud that denotes available moves. Here, the brightly glowing End Turn button tells you you've done all you can

specific ones, knowing they're more likely to open a pack of unwanted cards and duplicates?

Yes, they will. *Hearthstone* has a crafting system, its principal addition to the F2P formula, which is fundamental to the game's longevity and, crucially, its profitability. Unwanted cards can be 'disenchanted' and broken down into arcane dust, which players can use to craft the card of their choice. It's a stroke of genius, meaning every single card has value and money spent on packs is never truly wasted. But Blizzard's used to balancing gameplay systems, not financial ones.

"It's something we're going to have to iterate a lot on," Chayes admits. "We're focused on trying to make it so that it doesn't feel overwhelming to get the card you want, [but] so it feels like cards still have rarity. We want you to open up a Deathwing card and go, 'Oh my goodness, I got Deathwing!'"

If there's one disappointment, it's that *Hearthstone* will be client-based instead of playable in a browser. That, Chayes says, stems from the decision to integrate it with Battlenet, which handles matchmaking and may even power cross-platform play when the iPad version launches. However, locking out potential lunch break players by requiring an install most workplace computers won't allow will limit its reach. Accessibility, after all, is more than just a gameplay concept.

For Blizzard, this is the game that brings it up to speed with a changing industry. It's got a free-to-play game at last, one with a monetisation strategy that is both of benefit to the player and potentially lucrative. It's also created a small, nimble team that's able to break from company tradition by getting games out quickly. Perhaps the biggest victory here, then, is the formation of Team 5. ■

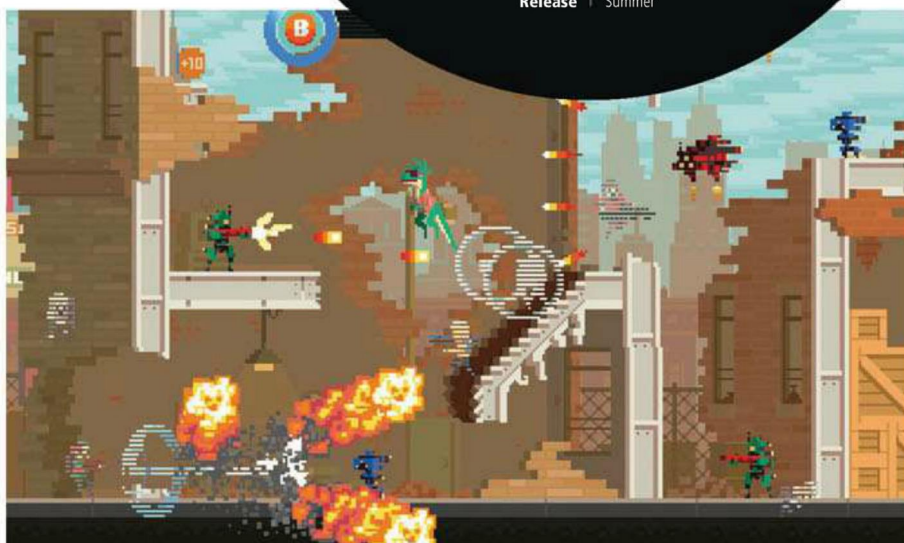


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SUPER TIME FORCE

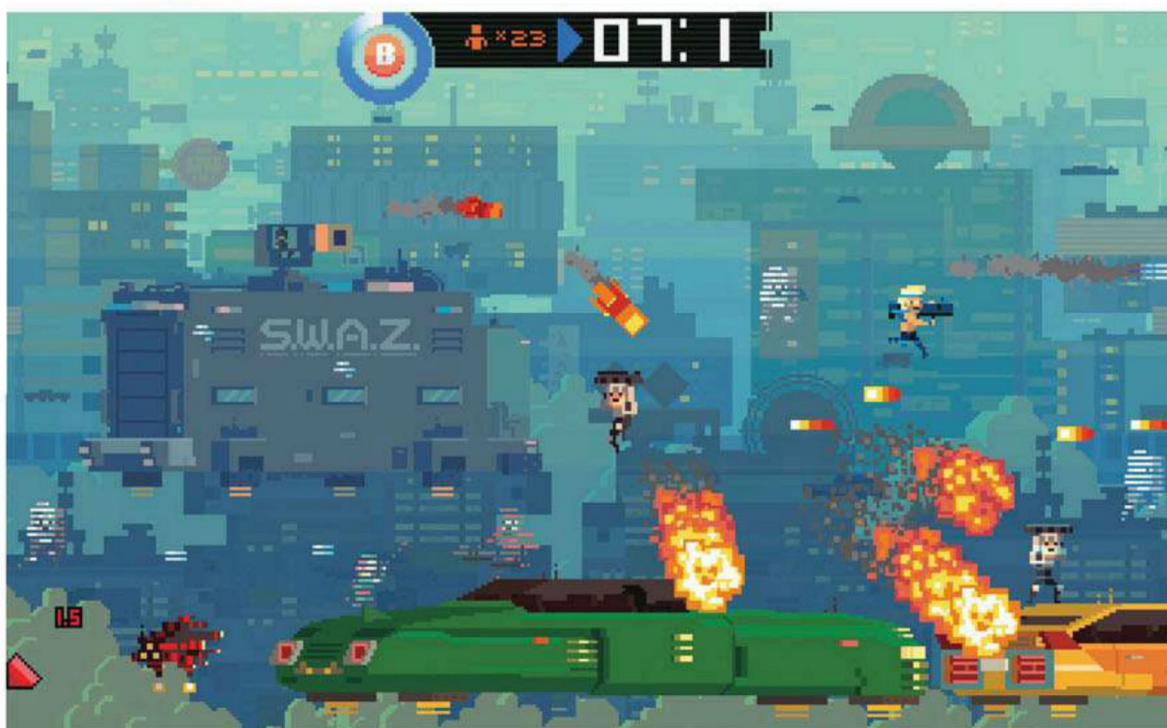
Capy's side-scrolling shooter is no mere '80s homage

Publisher	Microsoft
Developer	Capybara Games
Format	360
Origin	Canada
Release	Summer



Bosses show *Super Time Force* at its most chaotic. We had 20 lives onscreen once, but could have done it with ten if we'd realised it only took damage from the side

ABOVE The timeline mechanic would go some way towards excusing sloppy design, letting Capy fling endless trial-and-error deaths at players. There's little evidence of that in this early build, thankfully. **RIGHT** While you can rewind events at any point, your mission is still governed by an overall time limit. Clox found throughout the levels will buy you precious seconds to complete objectives



The most recent addition to Capy's own force is Renaud Bedard, who was the programmer on another pixel-heavy XBLA game, *Fez*. "Within three days, he was making changes and checking them into the repo," Vella says. "That's how you want it to roll"

The typical game jam results in a raft of quirky prototypes — clever concepts, sure, but rarely more than that, a natural consequence of being made to a theme in a tight time frame. They're not, as a rule, turned into full games, picked up by Microsoft and published on Xbox Live Arcade. *Super Time Force* is an exception, its core concept having been devised by just three Capy staff in three days at the Toronto Game Jam in 2011.

"It started at the Independent Game Summit at GDC a few years ago," says Capy co-founder and president **Nathan Vella**. "Kyle Pulver, who made *Offspring Fling*, gave a five-minute rant on how everybody should go to a game jam, that it'd make you a better game developer. We thought it made a lot of sense."

The Toronto jam's theme was "What just happened?"; a good fit for a game that recalls 8bit-era mechanics just so it can subvert them. At first glance, this is the latest in a long line of indie retro throwbacks, a side-scrolling shooter stuffed with chunky pixels and knowing nods to the cartoons and action films of the 1980s. Then you die, and you're introduced to its core mechanic: a timeline. You'll rewind time a little, expecting to be resurrected, but instead you're presented with a character select menu. Dive back in, prevent your forebear's death, and they'll live to fight alongside you. You'll die again, rewind again, save again, and by the time you reach the end of a stage there might be a couple of dozen of you onscreen. You don't even need to die: the timeline can be brought up at any time with a tap of the 360 controller's B button.

It's a simple idea that has, Vella admits, presented countless design challenges. "What about enemies that track you? Who do they track? Even something as basic as enemies



that are aware of the player has complications. It's like *The Butterfly Effect* or *Back To The Future*: breaking the concept of time, a timeline, in a game."

The trio that came up with *Super Time Force* — Kenneth Yeung and twin brothers Mike and Vic Nguyen — "bashed their heads against the wall and figured it out. I'm really proud of the fact that we can approach a

Zackasaurus, a skater and talking dinosaur, can claw away projectiles. It's a comprehensive set of powers that invites experimentation, but only to a point. A tight countdown timer means that the overcautious will find themselves arriving at a stage's boss with seconds on the clock, and we frequently found ourselves rewinding right to the start of a level to improve our run through it.

Dive back in, prevent your forebear's death, and they'll live to fight alongside you

problem, smash up against it a whole bunch of times and then come up with the solution."

Each of the game's characters riffs on '80s pop culture, and is suitable for a different job. Five are available at the outset, with a sixth rescued during one of the two currently playable stages. The machine-gun-toting Jean Rambois is a sensible opening choice, but after he's fallen you might switch to the mulleted Jef Leppard and his rocket launcher, or Shiedly Blockerson to return the killer bullet to its sender. A charged-up Lady Sniper shot will penetrate walls and ceilings, while

Microsoft is due to publish the game on Xbox Live Arcade this year — it's an exclusive, too — but has been surprisingly hands-off, letting Capy slowly ramp up development on the game alongside its other projects. When *Super Time Force* caught Microsoft's eye at IGF 2012, Capy was only working on it one day a week. "When we sat down to sign the contract, I was like, 'By the way, we really only work on this game on Fridays,'" Vella says. "They were like, 'If it's a pet project, keep it a pet project. We're signing this contract because we love the game and we're here to help... Don't need help? No problem.'"

Giving the project time to breathe has, Vella says, resulted in a better game, since every exciting possibility *Super Time Force's* central mechanic inspires is also a way in which it could all go horribly wrong. There are still challenges to be overcome, particularly on the visual side — it's hard at times to pick out where your character spawns on a screen teeming with doppelgängers. We'd argue, too, for greater distinction between the bullets doing damage to bosses and those bouncing off. But there's a delightful rhythm to *Super Time Force* and, for all its loving nods to the 1980s, it feels thoroughly new. It's a twitch shooter that lets you catch your breath, and one in which death is merely the beginning. ■



Fire hazard

Given just how much onscreen mess a single player can create, it's little wonder that Vella admits Capy had to can a planned local co-op mode. "When you get to boss areas where it's just a locked screen, and you put 25 lives on that screen times two, you'd be drawing 500,000 different sprites. And I think that might cause consoles to set on fire, maybe mangle a child." Either outcome would surely fall foul of Microsoft's famously exacting Technical Certification Requirement standards, although Vella believes that a little bureaucracy has, if anything, helped to focus the development of such an inherently chaotic game.

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DIABLO III

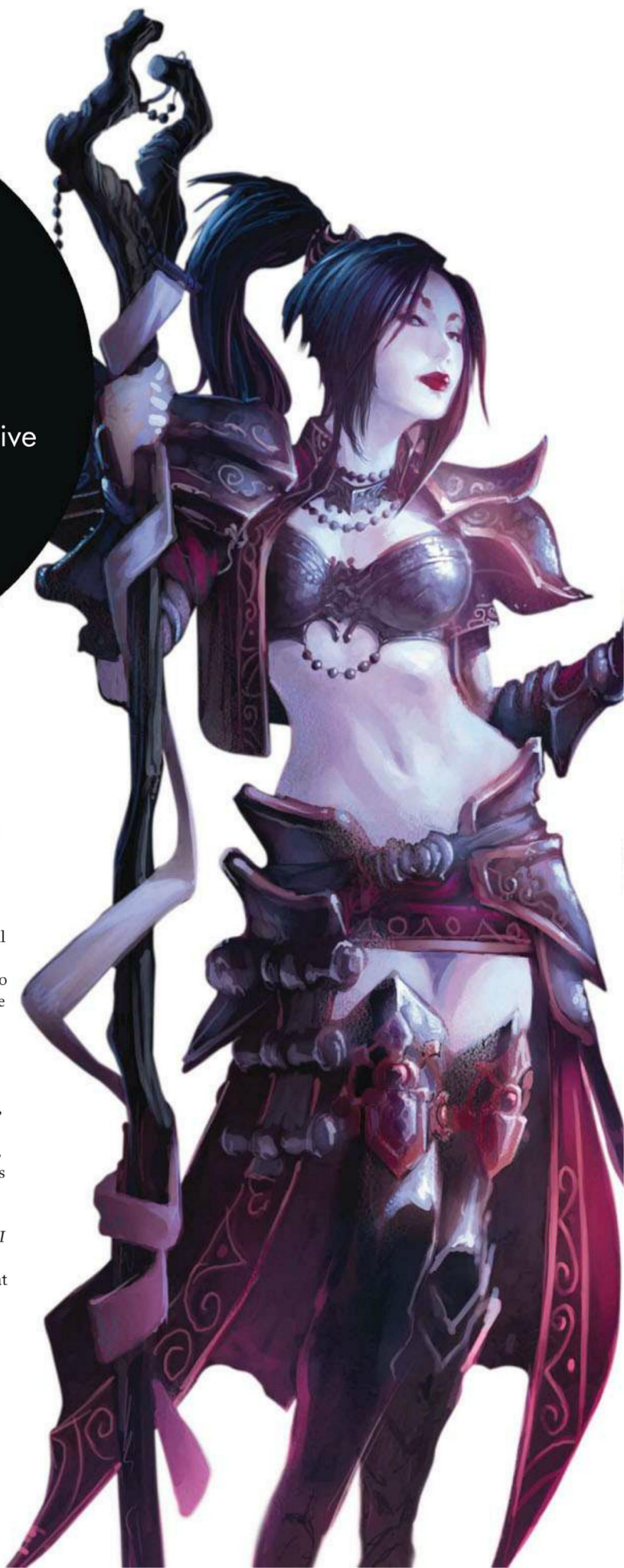
Can Blizzard's action-RPG survive the transition to consoles?

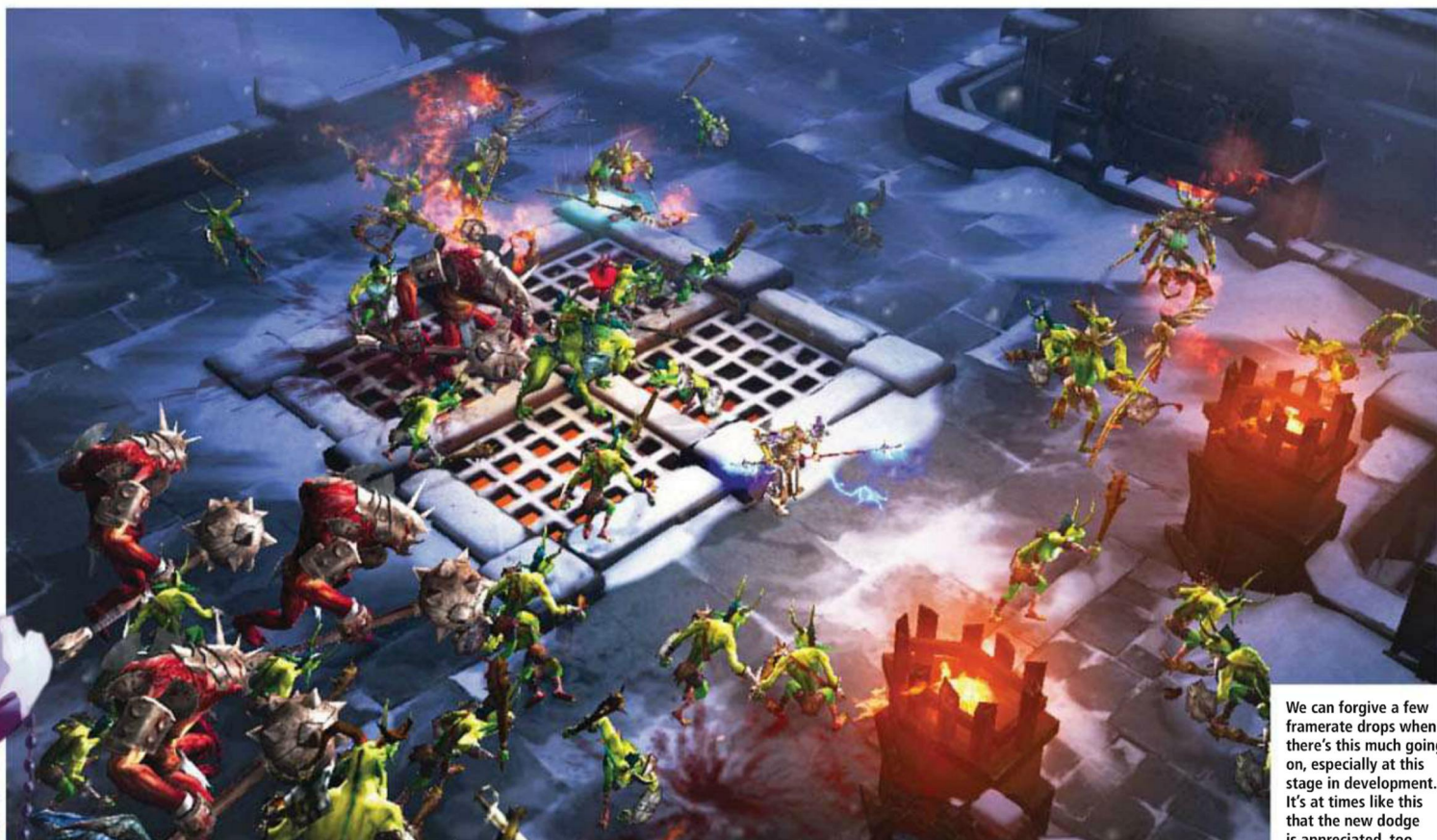
Publisher	Blizzard Entertainment
Developer	In-house
Format	PS3, PS4
Origin	US
Release	2013

RIGHT The new dodge and direct stick control seem built for melee classes such as the Barbarian, while auto aiming assistance will be on hand for ranged attacks. Blizzard will still need a good solution for target selection on console, though

Some games are defined by their control schemes. *Diablo* belongs under the control of a mouse, just as *Street Fighter* is at home on an arcade stick and *Angry Birds* is best suited to a touchscreen. When *Diablo III* debuted for PC and Mac last year, the **Edge** office was drowned in a cacophony of clicking. Click to move your chosen hero until he's in position. Click to attack until all the demons are gone, and then click some more to pick up all the shiny loot your fallen foes have left behind. *Diablo III*, then, is defined by the click of a mouse; if you play it on a gamepad, is it still the same game?

Just about. In making the transition to PlayStation 3 — a PS4 version is also planned, though Blizzard's in no mood to discuss it at present — *Diablo III* has gained a dodge move, which is mapped to the right stick. While this certainly lends a little grace to proceedings, when combined with the free character movement on the left stick it makes *Diablo III* feel less like an action-RPG and more like an action game, and one with rather basic combat at that. In fact, with its isometric camera, crumbling ramparts, and hulking demonic bestiary, *Diablo III* on PS3 feels more like a homage to the *God Of War* series than the much-requested port of a multimillion-selling PC game that it is.





We can forgive a few framerate drops when there's this much going on, especially at this stage in development. It's at times like this that the new dodge is appreciated, too

A 15-minute demo isn't the best way to experience *Diablo III*, admittedly. The long game lies in the gear management, in kitting out your chosen character with absurdly powerful weapons and armour in order to cut an effortless swathe through the demonic hordes and pick up even more powerful loot. What is clear from the demo is that Blizzard's made a considerable effort to retool skill and item management for a controller and a big TV screen. The pause screen is home to radial menus for speedy selection of gear and attacks, but tweaks to the game design are focused on having players spend as little time in such menus as possible. There will be fewer but better loot drops than were found in last year's PC version of the game, for instance. Stand over an item and you'll be able to see immediately whether it's worth your time,

and you can either equip, collect or discard it with a quick press of a face button.

The decision to minimise time spent in menus chimes well with a game that, thanks to free left-stick movement and that right-stick dodge, feels a little pacier than the

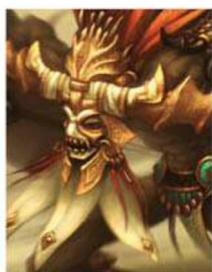
Stand over an item and you'll be able to see immediately whether it's worth your time

original. Yet the driving force behind it, surely, is local co-op, which is arguably the console version's unique selling point. Housing four players on one screen equals four times the fiddling in menus, after all. It's not local only — you can mix online and off, with two or

three players on a sofa and the rest recruited over PSN — but that's the PS3 version's headline feature, despite the fact that it hasn't made it into this first playable demo. Blizzard says this is because it wants the focus to fall on the work it has done on *Diablo III*'s controls and interface, but we suspect the framerate, seemingly capped at 30fps and tanking to half that when the screen gets busy, also played a part in ensuring this first hands-on was a solitary experience.

Local multiplayer's not the only thing that's conspicuous by its absence. The PC version's controversial real-money auction house (see 'Grey imports') is gone for good and with it the always-online requirement. Yes, *Diablo III* will be playable offline.

It's far from a complete picture, then, but it does feel like *Diablo III* has been cut down a little for consoles. It certainly feels more like an action game than before — a genre for which PS3 players are hardly starved. And we can only imagine that the subset of PC players who want to play a lighter, pacier version of a game they've already played is rather small, even if they can do it from their sofa. Perhaps the real question isn't whether *Diablo III* on consoles is still the same game, but rather who it is supposed to be for. ■



Grey imports

Many believe *Diablo III*'s real-money auction house compromised the game, ultimately forcing players to pick between paying up or grinding indefinitely for rare loot drops. There's no real-money trading for PS3, or any Battlenet integration at all: Blizzard doesn't want to impose another layer of friction on players already served by PSN. Commendable stuff, but it could herald the return of *Diablo II*'s grey market; buy some gear on a shady website, invite the seller to your game and he'll drop it at your feet — or take the money and run. Blizzard can't police it, or take the 15 per cent cut it enjoys from the PC auction house.

While this image suggests *Survarium's* *STALKER 2* origins, the game's focus on player relationships marks it out as its own beast

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SURVARIUM

Vostok scavenges *STALKER's* carcass to create a new wasteland shooter

Publisher	Vostok Games
Developer	In-house
Format	PC
Origin	Ukraine
Release	2013



Vostok Games has taken the unrelenting isolation of *STALKER* and replaced it with an MMOFPS war, though the setting's just as rich

The *STALKER* series was about survival in one of the harshest of environments there is, one ready to kill you for even the slightest mistake. And for every fallen stalker, there's a project, developer or publisher that's met with an untimely end, too. The development team behind *Survarium* knows this only too well, since its previous project, *STALKER 2*, was cancelled by GSC Game World last year. In the spirit of survival against any odds, it formed Vostok Games to continue working on those ideas. But *Survarium*'s remit is far broader, and while the games share much of the same DNA, this is far from *STALKER 2* by another name.

The most striking difference after the unrelenting isolation of the *STALKER* universe is the shift to being an MMOG. Gameplay is split into two parts, with the initial phase seeing players gather within the in-game lobby to buy, sell and upgrade equipment; develop their characters; and to exchange information. The second phase will be more recognisable to *STALKER* veterans,

seeing parties head out into a wasteland viewed from a firstperson perspective.

But *Survarium* isn't limited to the area around Chernobyl. This time, the misfortune has spread beyond Ukraine, with a chain of disasters around the globe creating fertile stalking ground. As well as variety, these additional territories will bring with them new dangers and opposition. "*Survarium* is not about a sole man's fight for the loot," project lead **Ruslan Didenko** tells us. "It's a war of mankind's remnants for survival."

That war comes in three flavours: an exploration mode that's closest to a singleplayer FPS, though you can still encounter other players; a PvP mode that pits two teams against each other in a struggle to accrue the most resources; and a five-player PvE cooperative mode in which you must work together to survive hostile locations.

The game will be free-to-play, but Didenko insists that payments will focus on aesthetic upgrades and saving time. And

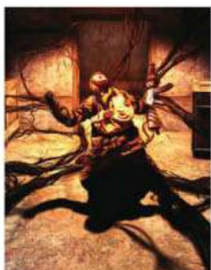
the decision to go free-to-play was a business one based on the difficulty of finding an investor to fund a long development period. This way, *Survarium* can launch earlier and be refined along the way.

But, despite the differences between this game and its forerunner, the fact remains that just three months separated the closure of *STALKER 2* and work starting on *Survarium*, and the ghost of *STALKER* hovers over it.

"When we got down to the new project, most of the team was still in *STALKER 2* with their thoughts," Didenko explains. "*STALKER 2* was initially designed as a cutting-edge game with a powerful story, which would not only entertain the player, but also raise topical ecological problems, contain speculations about man's self-identification and about the role of mankind in evolution. Some of those ideas have found their way into *Survarium*."

"That said, *STALKER 2* and *Survarium* are completely different games. *Survarium* is an online game with the relationship between the players being the primary focus. Figuratively speaking, the storyline in *Survarium* serves as decoration – the action is provided by the players themselves."

It's an ambitious project, but one built on strong foundations. Vostok Games doubtless hopes that *Survarium*'s fictional globe-trotting will bring it similarly wide-reaching success. With alpha testing registration opening last month, however, there's still some distance to go. Nevertheless, worldwide pandemics have rarely looked so appealing. ■



Ukrainian gains

Both Eastern European and Russian culture are gaining an increasingly strong foothold in western entertainment. "We have been seeing that since the early '90s," says Didenko. "It used to be that the focus was more on Russia. Now, though, we can see Ukraine or Ukrainians mentioned regularly here and there. I wish they would change that horrible accent our compatriots are being voiced with in the movies, though." And the region is thriving where development is concerned, too – you'll find 4A's *Metro: Last Light* in this month's Play, and we looked at Bohemia Interactive's *ARMA III* in issue 253.



ROUND-UP

ZELDA 3DS

Publisher Nintendo Developer In-house Format 3DS Origin Japan Release TBC



Revealed in April's Nintendo Direct, *Zelda 3DS* will see you ascending enemy-filled towers floor by floor in an inversion of, and complement to, traditional dungeons. But there's a fresh perspective change of another sort, too: Link's Merge ability. Tapping the A button when standing next to a wall will see Link lose one dimension as he enters the wall and becomes a living chalk outline. The power is effective for a limited time, but allows for some novel puzzles as well as an escape route should you find yourself in a corner. Set in the same universe as *A Link To The Past*, it seemingly even shares a gameworld with the 1991 classic.

BROKEN AGE

Publisher Double Fine Developer In-house
Format PC Origin US Release 2013



Double Fine Adventure, the Kickstarter-funded point-and-click adventure, has left its codename behind and gained a real one: *Broken Age*. It stars two protagonists, unaware of each other but living parallel lives. The first, a young girl, faces sacrifice at the hands of her fellow villagers and family, but isn't prepared to submit without a fight. Meanwhile, a young boy who longs for adventure is living alone on a spaceship under the watchful lens of a maternal computer.

HARDWARE: SHIPBREAKERS

Publisher Blackbird Interactive Developer In-house
Format TBC Origin US Release TBC



Made by former *Homeworld* developers, *Hardware* is a free-to-play RTS game set on a desert planet strewn with the rusting hulks of starships. Details are scarce – a teaser trailer constructed from concept art is all that's been shown as yet – but persistent multiplayer on a planetary scale is promised.

TEARAWAY

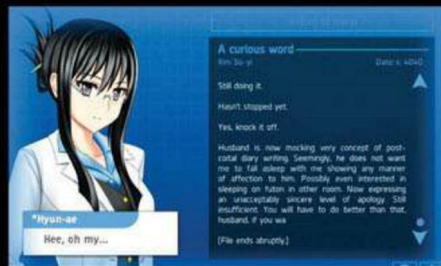
Publisher SCE Developer Media Molecule
Format Vita Origin UK Release October 22 (US), 23 (EU), 25 (UK)



Lead designer Rex Crowle wants to go beyond touch controls and create a game that you really feel. Now *Tearaway* has a firm October release date, it's far more tangible. Its crisp, papery world will feature more puzzles than combat as you seek to discover the message delivered by protagonist Iota.

HATE PLUS: MUTE'S GOLDEN DAYS

Publisher Christine Love Developer In-house
Format PC, Mac Origin Canada Release Summer



Christine Love's follow-up to *Analogue: A Hate Story* picks up directly where that game left off, continuing from your previous save file. Once again, you must investigate what happened to a space-bound patriarchal society by researching computer files, though this time you get to choose the files.

MARIO PARTY 3DS

Publisher Nintendo **Developer** In-house
Format 3DS **Origin** Japan **Release** 2013



Nintendo is letting its party spill out of the living room to anywhere that's around three-and-a-half hours from a mains socket, it would seem. Details are scant, but we do know that it will feature 81 new minigames, some of which will use AR cards, and that the game's not due till late 2013.

FLASHBACK

Publisher Ubisoft **Developer** VectorCell
Format 360, PS3 **Origin** France **Release** 2013



Paul Cuisset has returned to familiar territory after the commercial and critical failure of *Amy*, regrouping the core *Flashback* team for a reimagined version of the original. The game's been overhauled with new graphics and audio, but we can't help but feel it lacks the 1992 game's rotoscoped charm.

YOSHI'S ISLAND 3DS

Publisher Nintendo **Developer** In-house
Format 3DS **Origin** Japan **Release** 2013



Another updated favourite heading to Nintendo's handheld, *Yoshi's Island 3D's* gameplay is apparently largely unchanged from the SNES original and DS sequel. Its reveal offered little evidence that it will take advantage of the device's 3D capabilities, beyond framing the pastel-like visuals.

KACHINA

Publisher Ben Esposito **Developer** In-house
Format iOS, Mac, PC **Origin** US **Release** TBC



Unfinished Swan level designer Ben Esposito's physics-based toy is looking to make use of the negative space left behind by *Katamari Damacy*. You control a hole in the ground, swallowing creatures and Native American artefacts and spitting them out elsewhere. Each object you swallow, however, increases the diameter of the cavity. Esposito is working on the game in his spare time, and says it draws "as readily from Hopi folklore as it does Bruce Springsteen".

THE EVIL WITHIN

Publisher Bethesda **Developer** Tango Gameworks **Format** 360, PC, PS3, PS4 **Origin** Japan **Release** 2014



Resident Evil 4 marked the moment that not only Capcom's series but also the survival-horror genre took on some of action gaming's DNA. So it's perhaps surprising that its director, Shinji Mikami, has returned to survival-horror to fix what he sees as an excess of action. *The Evil Within*, he promises, will be really scary, and will focus on the disempowerment of its protagonist. But that's not to say *The Evil Within* will include no action elements at all – he just believes a good balance is the key to the equation. And he's backed by a team that's experienced in action titles, many of whom worked with him on *Vanquish*.

The real thing

Oculus Rift is a bold bid to bring back VR. If it succeeds, gaming will never be the same again



Oculus Rift absolutely can deliver on the wild promises of immersive virtual reality. But the very nature of how it fools the human brain has huge ramifications for the design of VR games, as those with dev kits are fast discovering

†

he virtual reality origin story begins and ends quickly. It starts with the rise of VR as a pop-culture phenomenon in the early '90s, fuelled by Virtuality's arcade machines, The Lawnmower Man, the BBC2 game show Cyberzone, Sega's Mega Drive headset and Atari's prototype Jaguar head-mounted display (HMD) that never made it to shelves.

It ends soon after with an abrupt full stop. For a moment, virtual reality was everywhere, then almost at once, it was nowhere.

"I don't know if you can say any one person killed virtual reality," says Oculus Rift creator **Palmer Luckey**. "That implies it had a chance of surviving anyway, but the technology just wasn't ready at the time. Virtuality was pushing the boundaries of what was possible, but most people imagined VR was some crazy thing that transported you into the Matrix, and it could never be that. I don't think anyone has ever pushed or surpassed the expectations of the general public – once the expectations and the reality collided, I think that's what really killed VR."

Oculus's head-mounted display is where reality at last meets players' expectations. To enter an artificial world so convincing it fools your eyes and mind was the dream of virtual reality long before the idea was ever given a name. As early as the 1500s, Italian artists were painting frescoed rooms designed to evoke more expansive spaces. In the late 1950s and early '60s, filmmakers experimented with cinematic immersion. The first experiments with head tracking were successfully completed in 1968 at MIT's Lincoln Laboratory, where The Sword Of Damocles – a terrifying contraption suspended from the ceiling of a lab – offered mechanical tracking and a headset displaying simple wireframe rooms and cubes. The first mass-market HMDs designed for gaming were launched in 1991 by W Industries, shortly before the company was renamed Virtuality. Powered by an Amiga 3000 and retailing for \$60,000, the system was expensive for arcade owners and disappointing for players. This was not The Lawnmower Man or Star Trek's holodeck. Expectations collided with reality and reality came up short.

Oculus Rift is a long way from finished and an even longer way from a holodeck, but after watching the reactions to it at this year's Consumer Electronics Show (CES) and Game Developers Conference (GDC) where Luckey demonstrated the dev kit, it's good enough. Look up in the Unity-powered Tuscany tech demo and you'll see sky; look down and you'll see grass. Peer over a balcony and you might feel the lurch of vertigo as Rift tricks your mind with its fast response time and all-encompassing screen.

"Our visual system is by far the most powerful sense we have, and it overrides pretty much everything else," says the 20-year-old Luckey, "so I wanted something that actually covers as much of your visual field as possible. I was looking for something that made it actually feel like you were inside of the game, not just looking at a screen that happened to be strapped to your head."

The device that would become Rift was, in 2012, Luckey's hobby. He would dismantle existing headsets and reassemble new ones, but never

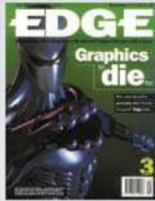
"Our visual system is by far the most powerful sense we have; it overrides pretty much everything"



The Rift consumer model (above) will be slimmer than the current dev kit (left), but while the specs will differ, the principles will be the same. Games are rendered twice (below) and distorted to create a wide field of view. Rift's lenses turn the imagery into something your brain can understand



FROM LEFT Palmer Luckey, the 20-year-old Californian behind every Rift prototype, and Brendan Iribe, Oculus's CEO and a former manager at Scaleform, Gaikai and Autodesk



GRASS ROOTS

The first appearance of virtual reality in **Edge** arrived in issue three, published in November 1993. 3DO had just launched, and in an eight-page article we reported “according to all experts, true VR in your living room is only 12 months down the line”. The experts’ optimism might be forgiven given just how much expertise and money was being devoted to VR at the time. This was the year of Sega’s Japanese VR theme parks, when Logitech built its first motion-sensing mouse, and when Silicon Graphics’ RealityEngine was presenting a level of realism never before seen in an interactive space. When users’ experiences failed to live up to all the hype, the money dried up and VR spent the next two decades as a tool for military training and as an area for research.



ABOVE No amount of industrial design will turn Rift into a fashion accessory, but already the dev kit is smaller and lighter than past VR attempts. The smallest, lightest head-mounted displays – Carl Zeiss’ Cinemizer, for instance – are more elegant, but lack the motion sensors and the all-encompassing view

found something that satisfied his demands for a wide field of view and low latency. “I bought a head-mounted display,” he explains. “I wasn’t happy. I bought another – still wasn’t happy. I was another one of those people who imagined VR technology was a lot more advanced than it really was. I have about 50 [HMDs] now, but when I started the Rift I had 20 and none of them could do what I wanted them to do, so I started from scratch.”

Developers’ first experience with Rift came at E3 2012, when id Software’s **John Carmack** borrowed Luckey’s sixth homemade prototype and spent three days showing it off with a custom version of *Doom 3*. “Right now, it’s just about building excitement,” Carmack told us at the show. “Who cares about the market? This is just too cool not to support.”

Carmack had been toying with virtual reality himself for several months before stumbling across Luckey’s work on an online forum. His enthusiasm for the young creator’s efforts proved infectious. Within a month of E3, Luckey’s hobby project had become a full-blown business: Oculus VR. Scaleform and Gaikai veterans **Brendan Iribe**, Michael Antonov and Nate Mitchell joined as CEO, lead software architect and vice president of product respectively, arriving a few weeks before the project was placed on Kickstarter. By the time the clock ran out, Rift had made ten times its \$250,000 goal.

“By the time I got to see a demo of it, Palmer had already done the work and John [Carmack] had already made this magical experience inside,” says Iribe. “I had seen VR in the past that had never lived up to expectation, and then suddenly you look through this prototype – circuit boards and wires dangling out of it – and that experience you’ve always dreamed of is there.”

Flights to China were booked, manufacturers were chosen, screens were sourced, and the Oculus tracker was designed. In April, just nine months after the prototype’s public debut, development kits were shipped to Kickstarter backers who pledged \$300 or more. The sheer speed of Rift’s development is astounding but understandable: Oculus potentially has billion-dollar competitors, all of which it has now beaten to market. “This is VR’s moment, and if it’s not us, it’s going to be somebody else,” says Iribe. “We’re doing our best to make it happen as quick as we can, so that we’re part of the whole new industry of VR gaming. Hopefully a big part of it. And it looks like we’ll be leading it to a large degree.”

For now, Rift is the only real contender in the emerging virtual reality market. For starters, it’s cheap. Other head-mounted displays exist, but none can match Rift’s performance at the same \$300 price. Dismantle the unit and it’s a surprisingly simple piece of design: an elastic strap attached to a lightweight plastic shell housing two lenses, a single seven-inch screen, and Oculus’s own motion tracker. The development kit, Luckey



UNDER CONTROL

There are a number of solutions to VR's control requirements. Razer's Hydra is a nunchuck-based controller that uses magnetic motion sensing, and can be used to replicate a pair of hands in the VR space. But with thumbsticks for movement, it's still a degree of abstraction away from true immersion. Meanwhile, Virtuix's Omni treadmill (left) locks players in at the waist and uses a pair of slick slippers on a polished surface to track movement. Even it has nothing on the University Of Southern California's Project Holodeck, which uses a Rift with Hydra's sensor for magnetic tracking and PS Move's glowing orbs for optical tracking in a 10x12ft space players can explore at will.

stresses, is heavier and bulkier than the planned consumer model, but even now it's comfortable and the experience is immersive. "We're selling our developer kits for \$300, and we're hoping to put the consumer product somewhere in that same price range," says Luckey. "If something is a thousand dollars, it doesn't matter how good it is: people aren't going to be able to buy it."

More importantly, Rift has developer support. "When we launched the Kickstarter, I got hundreds of emails from these top-tier developers saying, 'We want to step inside of our game,'" says Iribe. "And literally these are the developers of some of the biggest IPs in the world. They were emailing saying, 'We want to do this, and we want to be part of this from the beginning.' A lot of that stems from having an ambassador like Carmack going out there. He's an innovative guy. He brought us real 3D gaming. Leave it to Carmack to be a part of bringing us VR."

Carmack's assertion at E3 was that the tech was "too cool not to support", and countless developers have backed him up. So it's ironic that id's own *Doom 3* missed Rift's dev kit launch and instead Valve became Oculus's first major backer, patching *Team Fortress 2* with VR support and testing seven different control schemes with the device. *Doom 3* is still on the way, as is mech sim *Hawken* from Adhesive Games, which was among Rift's earliest supporters. Rift's period with developers only – expected to last at least 12 months – is time enough to ensure many more games will support VR by its consumer launch, but it's also time to solve the inherent design problems presented by VR gaming, which are only now becoming apparent.

"Nobody has ever developed a game for VR, at least not on a large scale," says Luckey. "People are having to figure out how pacing works, how storytelling works, how controls work, how all these things that are taken for granted in game development have to be changed now they're working with VR hardware. Games generally have to pound you over the head with something just to make you feel it. You have games where players are running at 40mph to try to convey speed, but in VR we're finding that totally breaks the sense of immersion and the player feels disorientated. There's a lot of things [developers do] in normal games that you don't want to do in a VR game, and developers are only now starting to explore them."

Gaming's incompatibility with VR only becomes apparent when you play a game like *Team Fortress 2* one inch from your eyes. Even something as mundane as hitting pause creates a level of cognitive dissonance akin to a stutter in your brain, so one early solution has the pause menu laid upon the 3D space without turning off the motion tracking. Loading screens are an obvious problem, though, as is an onscreen HUD. If you have a crosshair then where exactly should it be displayed? Inches from your eyes, or several feet away?



TOP *Hawken* was the first game to back Rift after its E3 debut. ABOVE + BELOW *Team Fortress 2* supported Rift's Kickstarter campaign with free hats for all dev kit owners. Valve also chose *TF2* for its VR tests due to its large player base, but its high-speed gameplay is poorly suited to virtual reality. The community is hard at work on VR mods for *Portal* and *Half-Life 2*



VR'S LONG JOURNEY INTO THE HOME

While *Virtuality* was bringing VR to arcades in room-filling \$60,000 units, a number of manufacturers attempted to bring a comparable experience to homes. Here are the failed forerunners of consumer VR.

Sega VR for Mega Drive ❶ was announced in 1991 and Sega even demoed a sleek unit it had developed with design firm IDEO at the Chicago CES in '93. It was a wildly ambitious project given Mega Drive's 7.67MHz Motorola CPU and the headset's planned sub-\$200 retail price, both of which are also far better explanations for the project's cancellation than Sega's supposed concerns that players might hurt themselves while immersed in such a believable world.

In 1994, Atari partnered with *Virtuality* for its soon-aborted **Jaguar VR headset** ❷. And while that device was never released, Philips' *Scuba HMD* and Takara's *Dynovisor* both used motion-sensing and display technology that was built for Atari and acquired during *Virtuality*'s collapse. "Absolute crap" is among the nicer things said about *Scuba* and *Dynovisor* by posters on the Internet.

Perhaps the most successful attempt at home VR in the early '90s was Forte's **VFX-1 HMD** ❸ for PC, which retailed for around £400 and had a relatively sophisticated tracker, but was expected to run on 486 systems in 1994 long before video cards had become essential PC components. Forte was liquidated and its assets bought by Vuzix in 1997.

Business-focused display specialist eMagin took a shot at home VR in 2005 with its **Z800 3DVisor** ❹, which started at \$800 but today sells for \$1,800, since the company is producing fewer and fewer units. 3DVisor uses two OLED screens for a 40-degree field of view, a spec matched by the recent **Carl Zeiss' Cinemizer** ❺ and Sony's HMD-Z1 and HMD-T2, all of which are commercially available and retail at between \$750 and \$850.

While *Cinemizer* supports an optional motion tracker, Sony's headsets are essentially red herrings in the virtual reality space, since they have no built-in motion-sensing capability and are subject to latency far beyond the tolerance of gaming. In any case, every modern HMD seems stuck at the 40-45 degree field of view, the effect of which is like viewing a distant screen suspended in black space. For now, it seems that none of Oculus VR's competitors can match Rift's screen-filling 90-degree field of view or its \$300 pricetag, which makes it the clear leader in the gaming VR field.



❶



❷



❸



❹



❺

VR chips away at even the most fundamental pillars of modern gaming. Suddenly, the gently bobbing onscreen gun is a problem. Add Rift support to, say, *Doom 3* without further customisation and you find yourself with a gun mounted on your chin. So where should the gun sit? Should it be readied near your shoulder or should it rest at your hip? Should there be a delay between raising it and firing? And how should players aim? Will bullets still go directly to the centre of the screen – right between the player's eyes – or are weapons best aimed manually and handled separately from your eye line? And if you're going with the latter, how would that even work with controllers as we know them?

"We're already starting to see some trends regarding controls," says Luckey. "It's pretty clear that a keyboard and mouse are not going to be the most natural interface for VR, and it's probably not going to be a gamepad either. It's going to be something else, but we don't know what

that something else is yet. There's Razer's Hydra motion controller and that's a very interesting piece of hardware – people enjoy that you can reach inside of the game and interact with objects and move them around. We think that it's going to be really powerful in VR."

Adding Rift support to an existing game is an easy job, says Luckey, but it's only once the motion sensors and display are working that you run into problems. "We provide all the code and it's pretty easy to get it working on a technical level. The

hardest optimisations are on the gameplay and user-interface side."

Then there's the psychological and physiological problems of virtual reality, though to attribute them to the hardware isn't entirely fair. Many of VR's faults are actually foibles of the human brain. Motion sickness, for instance, is understood by some doctors to be triggered when motion is seen but not felt, or felt but not seen; the brain recognises it as a neurological malfunction, probably the fault of a toxin, and responds by attempting to flush out the poison, with colourful effect. In Valve's *Team Fortress 2* documentation, the team refer to players unaffected by VR-induced motion sickness as "freaks", so uncommon are they, but the studio has also found that most players get their sea legs by increasing their exposure to virtual reality over time.

But at least a part of the motion sickness problem – which Sega and Atari both ran into during their experiments with home VR – is solvable with technology. Positional tracking is one of the key improvements planned for the consumer Rift based on feedback from the development community. "Right now, we can track orientation of the sensor, but we can't track its movement through space," says Luckey. "If I want to lean into a control panel or peek around a corner, I need positional tracking. And those are the kinds of movements that game devs want to be able to do."

"Your brain wants the positional tracking to be there," says Iribe. "Even if you're not necessarily trying to move around the room, your torso is swaying around a little bit and you want that to be mapped in the game so it's comfortable for your brain. There's no way to make VR to get rid of all motion sickness, but it can be brought to the point where the technology itself isn't the cause of it."

THE REAL THING

For this and other reasons, Oculus VR stresses that its Rift dev kit is not intended for review. This is a period of discovery for those using the hardware and the software supporting it, not a finished work. Rift's current display for each eye tops out at just 640x800, for instance, a resolution low enough to create the impression of viewing the world through a mesh door. The motion sensor tracks only pitch, yaw and roll for now, and the latency still isn't low enough to meet John Carmack's expectation of 20 milliseconds between input and response for total immersion. Latency and field of view will be improved in forthcoming dev kits, the resolution will be improved in the consumer model, and positional tracking may be supported further down the line. Looking even further ahead, Luckey talks about the possibility of a wireless headset and motion controllers, but even now Rift delights just about everyone who uses it.

"I've lost count of how many times people take Rift off and they just say, 'Thank you,'" says Iribe. "Every time I hear a genuine thank you, especially from people in the industry that have been working on games for so many years, it's pretty special and it's a lot of fun to hear reactions like that. People smile a lot. They tense up when they fly high and fall in our demo. They get really excited. Everyone's been waiting for this for a long time."

So while Virtuality Entertainment's insolvency in 1997 marked the end of one VR dream – despite the concept surviving as a means of training surgeons and soldiers – it seems that technology and the world of game development are finally ready to meet consumers' high expectations. Virtuality's early '90s coin-ops ran at 30fps with low polygon counts and no textures, but today's game worlds can represent reality with a high degree of fidelity. Meanwhile, smartphones have driven the development of the kind of lightweight displays and motion sensors that once cost thousands of dollars, meaning that these days they are found in almost every handset, and cost only pennies.

2013 is, as Oculus VR's letter to developers states, "day zero for virtual reality". This is a fresh start for a technology 20 years behind the world's original optimistic schedule, and even now it's still a long way from where Iribe and Luckey see it ending up. "[Valve's] Michael Abrash said at GDC that he got in to gaming to realise VR when he joined up with John Carmack 17 years ago," says Iribe. "And *Quake* really did meet their expectations, but look at *Quake* now. I think perfect VR may be years away, just like modern realistic 3D was many years away from *Quake*, but back then *Quake* really did realise the vision of 3D gaming for most people. I think the first version of VR that we bring on the consumer side is going to realise the vision of VR for the mass market, and then it will only get better. I can only imagine ten, 15, 17 years from now... VR gaming is going to be totally incredible."

"Of course it could fail," says Luckey, "but it has a real chance of succeeding this time. I think VR is the ultimate medium. It's as far as you can go with gaming technology. It's one thing to be able to control an experience, but it's very different to have your brain and your body believing that they're somewhere they're not, experiencing something that they never could in real life. I think that's something really powerful and there's no other technology that can give you that. I think the game industry is ready for the next step and I think VR gaming is going to be it."

CLOCKWISE FROM BELOW LEFT Id co-founder John Carmack, former Epic design director Cliff Bleszinski, Valve developer Michael Abrash, controller engineer (and recent Oculus recruit) Jack McCauley, Valve president Gabe Newell and Unity co-founder David Helgason all backed Rift in its successful Kickstarter presentation



"People smile a lot. Everyone's been waiting for this for a long time"



Q&A: Palmer Luckey

The mind behind virtual reality's rebirth

A former engineer at the University Of Southern California's Mixed Reality lab, Luckey was hired on the spot after demonstrating his Rift prototypes. After the last of those was a success at E3 2012, he co-founded Oculus VR, was named one of Forbes' 30 Under 30, and is now spearheading Rift's development at the company's Irvine, California, HQ.

How did you feel about taking your VR prototype from a hobby project to a business in such a short time?

It was definitely a surprise. I'd been hoping that VR would take off at some point and I would be able to be involved in that industry. I believed that the time was close for when this would take off, but I didn't know it would take off nearly as fast as it did. I'll be honest, I'm not the best person to handle the challenges of setting up a new business. The reason I worked with Brendan and Nate is because they have a lot more experience running a business and managing business relationships. It wouldn't have made sense for me to go out and start a company on my own because it would have fallen over and died. I'm really lucky that I've been able to keep focusing on the things I was focusing on before – trying to create VR technology, trying to make ever-better hardware. In that respect, not much has changed for me, and I'm glad of that.

Did much change between Rift's prototype and the dev kits?

I think our tracker was one of the main things that we've built ourselves. It has much higher performance than the tracker that John [Carmack] was using at E3, and that in itself was a good tracker. It's about four times faster and it has a magnetometer built in to minimise drift... But there's still a lot of off-the-shelf parts. We didn't design our own display or anything, and a lot of the components in the motion-tracking chip are off-the-shelf and are very low cost because other markets have driven them down. What we've been able to do is get a really tight integration between all of them – between our custom tracker and between the display, and between the hardware and our software development kit. That's made it a much better experience than it originally was.

John Carmack remains unsatisfied with the delay between input and response. Is that something you can reduce?

It's always desirable to drive latency down. We've developed a tester that lets developers see how much time there is between the player's head movements and how they see it onscreen. A lot of the latency doesn't come from our hardware, it comes from the actual game itself and how it's rendered. Increasing the field of view and reducing latency are both very desirable and

they're things we're putting a lot of effort into for the next development kit.

Have you investigated health concerns involved with placing a screen so close to a user's eyes?

It's a common misconception to think that because the screen is so close to your eyes that it must mean you're straining to focus on it. That's the reason we have lenses to magnify the image and put it at a comfortable focal distance. It actually focuses the image at infinity, so the eyes are focusing as if the image is an infinite distance away, not as if it's right up in your face. There's definitely no health concerns on that side.

Are you looking at establishing industry standards for VR?

At this point, there's nothing to standardise; there are no other VR headsets with motion tracking that are even remotely on the same level. Sony has a head-mounted display, but it doesn't have any head tracking; other companies do head tracking, but it's very slow and it's a very small field of view. Most of what's in our SDK wouldn't even carry over to it. We will probably have to look at the problem when more people come to the market, but for now there's nobody to standardise with.

Can Oculus ever participate in the console space?

Technologically speaking, certainly. Our hardware is a display with a motion-sensing controller and could work right now. The biggest obstacle is that current consoles aren't powerful enough to render a game at 60fps with stereo 3D. Next-generation consoles might actually solve that power problem and be able to do real games at high framerates in 3D. It's all a matter of working with the console manufacturers.

What would constitute perfect virtual reality for you, and how far away is that technology?

The perfect VR device would be so good that you didn't have to suspend disbelief whatsoever; it would be indistinguishable from reality. I don't know if it's possible, because a lot of the advancements it would need are going to be medical, not technical. We'd need to somehow figure out how to read the brain, how to write to the brain and all of that. We have Moore's law, but there's no equivalent for biological sciences... Right now, we don't even know how to do basic implants in people without feeding them a constant stream of anti-rejection drugs that really kill your immune system. We haven't been able to solve that for hundreds of years. We have to solve basic problems like that before we're putting brain jacks in people for VR and it's like The Matrix. ■

A halftone world map background with the word 'OPEN' in large white letters.

OPEN



WORLD

Charting the new
wave of international
games fostered by
the democratisation
of development

Farid Hagverdiev, an Azerbaijani student, didn't wait for Infinity Ward to ditch WWII, Middle Eastern and near-future settings to depict the Nagorno-Karabakh conflict that afflicted his country. He wanted to see that game happen, so he pulled together a few friends at Baku State Oil Academy and made his own FPS.

The result was *Under Occupation*, a freeware shooter that casts the player as an Azerbaijani fighter battling Armenian troops for the city of Shusha. It was conceived as a sort of rallying cry to members of his generation, a game intended to inspire a sense of patriotism in those too young to have memories of the taking of Shusha by Armenian troops in 1992. It even has the endorsement of the Azerbaijani Ministry Of Youth And Sports.

Under Occupation won't win any industry awards, but it highlights that videogame development is now a global activity. Gone are the days when every game came from a small handful of hub cities, such as San Francisco, Tokyo and London, or even a select cadre of countries. The proliferation of programming knowledge and cheap game development software has created a world in which you'll find at least some game development activity in virtually every corner of the globe.

What we're seeing is the promise of low-cost development tools and the demolition of boundaries by the Internet starting to be realised. Across the globe, passionate developers are now expressing their unique cultures and experiences through the medium of videogames. The results may not always shine with triple-A polish, but often nudge gaming beyond its well-worn ruts. And where there are people experimenting with their own games, there is the hope that their successes will eventually blossom into a fully fledged local industry shaped by the culture in which it grew up.

If Azerbaijan represents an embryonic gaming scene, Poland offers a picture of how it could build into an international presence. After the dissolution of the USSR in the early '90s, Poles were exposed to anything money could buy, including expensive computers. But there were meagre computer science resources, precious few programming guides, and even fewer in Polish. What's more, Polish game developers faced distribution problems, a government that didn't support their work, investors who thought they were joking, and families that believed they were wasting their lives.

Some of those challenges are the same as those ahead of the next generation of digital creators in places such as Nigeria, Iran and Belarus today. But these developers have an advantage brought about by globalisation and technology that the Poles couldn't have dreamed of. In Poland, as Techland's **Blazej Krakowiak** explains, "Today's top game developers – programmers, artists, producers, sound designers – are often people who simply started experimenting with their first consoles or computers, using whatever information they could find to learn the basics." But scarcity of information isn't an issue with an Internet connection, even if language barriers may still persist. And free-to-use, well-supported game engines such as Unity further topple barriers to entry, opening the door to development talent wherever it may be based.

The potential upshot for players is diversity on an unprecedented level. Not every game will be worth your time, but the hope is for a stream of culturally significant, emotionally engaging and artistically experimental new games. The pioneers are already here. Over the coming pages are the development scenes to watch in the near future, but even they represent just the beginning.

And as one project finds success, it radiates throughout its region as investor confidence grows and knowledge spreads. Is *Under Occupation* the seed from which an Azerbaijani dev culture will emerge? Time will tell, but it has certainly emboldened Hagverdiev's team, which has begun work on a new project, one aimed not just at its home nation, but the global market.

NIGERIA

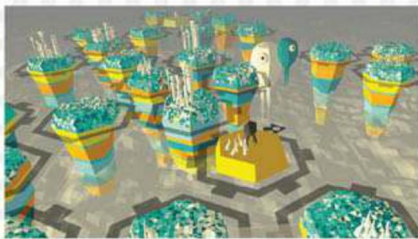
Gaming in West Africa has its roots in Ghana, out of which has come titles like *Sword Of Sygas* and *iWarrior*. However, momentum has now shifted to Nigeria, and a number of startups have emerged here in a relatively short space of time. Local companies such as Kuluya and Maliyo have sprouted up, focusing on the local webgame market and drawing heavily from Nigerian and African culture. Maliyo's *Okada Ride*, for instance, tasks players with weaving in and out of traffic, mimicking the motorcyclists who navigate Lagos's dangerous streets. And Kuluya has taken things a step further with the atmospheric adventure-puzzle webgame *Ogbanje*, which explores the beliefs surrounding an evil spirit that is thought to target families and cause grief.

The core strength of most current Nigerian games is, however, their soundtrack. "We have to play [to] our strengths," says **Idamiebi Ilamina-Eremie** of Sonbim Games. "We might not always be able to get the art, programming or gameplay strong, but with a good system and pair of headphones you can turn out really good music. Our music is doing pretty well internationally, so we have many producers who are willing to work for cheap [or] free. Music is where we know we can compete."



Sonbim's debut will be aquatic adventure *Titi Tilapia*. And the studio has grand plans for a new game made in Unity

INDIA



Oleomingus's *Oxygen* is a turn-based strategy title where two players manoeuvre around a shifting puzzle board

India is the second-biggest country in the world by population, with over 1.2 billion inhabitants, and has become an inexpensive IT outsourcing hub. It's world-renowned for its entertainment industry, too, creating music and films that reach huge audiences across the globe. Despite all that, game development here is rare.

While developers in many nations face challenges in acquiring investors and education, Indian creators have a larger problem: making games is traditionally seen as a waste of time. "Videogames in India are considered a trivial pursuit," says **Dhruv**, the lead designer at Oleomingus, an independent developer in Hyderabad, India. "To spend your time as an adult playing videogames – or even making them – is ridiculous. Videogames are a distraction, and if someone chooses to spend their time building games rather than pursuing a real profession then they do great discredit to their family."

It's a challenge that some at Oleomingus have had to confront, although one team member's family began to warm up to his career choice after the studio successfully raised \$900 on Kickstarter. "When we actually made money developing a videogame, there was cautious but greater acceptance of my work," says programmer **Sushanta Chakraborty**.

Oleomingus was founded earlier this year, and is working on a freeware PC title called *Somewhere*, an experimental game of exploration with a narrative that attempts to tell the stories of the inhabitants of a small Indian town. "It is an experiment in trying to communicate the social complexity of a typical fishing town on the western coast of India," says Dhruv. "*Somewhere* is not a single story, but an attempt at crafting a game world that can allow the expression of several smaller stories in their proper context."

Beyond a couple of movie-licensed games for Bollywood hits *Ra.One* and *Ghajini*, perhaps the country's largest-scale production is *Tryst*, a realtime strategy game from Blue Giant Interactive. But even though gaming is beginning to make its mark here with Blue Giant's work and that of smaller indie studios such as Oleomingus, Yellow Monkey Studios and Hashstash Studios, Dhruv remains tepid about the future. "All our support comes from indie gaming communities outside India or the design college that I am currently studying at," he explains. "We are therefore not developing for the local audience of game enthusiasts, but for a larger audience who are willing to consider games as an investigative art form."

Another hurdle for developers here is that most games are currently in English. As a result of that language barrier, the most popular games here tend to be shooters, since the story and dialogue don't have a large effect on the gameplay. "This condition is not conducive for any experimentation with the model of games that people are already familiar with," Dhruv says. "Any attempt at experimental games will not find a local audience, simply because they will always expect a videogame to be a simple shooting or jumping exercise. So even with people playing games, there is no discussion of what games signify culturally."

VIETNAM

Vietnam and its neighbours in Indochina – Laos, Cambodia, and Thailand – haven't been nearly as successful in the gaming industry as, say, South Korea and China, due in no small part to a century-long string of conflicts and wars in the region that finally abated in the '80s.

Vietnam still has a long way to go to catch up to its regional competitors, but **Nicolas Leymonerie**, head of IGDA Vietnam, is optimistic. "I would say that it's just a matter of time, development and economic growth," he says. "That's mainly why Vietnam is not as involved as other countries in the videogame industry, because they started and developed sooner. I've seen the exponential growth of this industry, and we'll be able to quickly see the Vietnamese game industry competing on an international level."

Things are indeed progressing at a rapid pace. In 2009, Hanoi's Alley Labs released the internationally lauded iOS game *Meteor Blitz*, a space shoot 'em up in the style of *Super Stardust*. Meanwhile, the most widely circulated title to date has been Emobi Games Company's 2011 FPS *7554*, which is based on Vietnam's history at war, recounting the victory of the Vietnamese over French forces. It's been translated for the western market, too.



7554 is a COD-style FPS based on the battle that ended the First Indochina War and forced the French out of Asia

NORTH KOREA



Pyongyang Racer was created by Nosotek for a tourism company, and tours North Korea's major landmarks

The global reputation of North Korea has been dominated by its nuclear ambitions, geopolitical rhetoric and propaganda, but over the past few years the government has been quietly bolstering its IT sector. Notoriously isolationist, it's a seemingly unusual place to find a game development presence.

There's certainly no thriving independent scene here, but the government has been putting a focus on developing its IT prowess after Kim Jong Il declared the computer illiterate as one of the three fools of the modern day (the others being smokers and those who don't appreciate music).

A few outside investors have even looked to North Korea as an outsourcing destination – the German-backed organisation Nosotek creates licensed iPhone and PC games based on films such as *Men In Black* and *The Big Lebowski*, for instance. That's right, *The Dude's* carefree pacifist bowling title was crafted under one of the most notorious dictatorships on the planet.

Nosotek isn't the only outsourcing destination in the region, though. It's near-impossible to get exact figures about the secretive country, but recently an outsourcing analyst said that North Korea has several IT companies dedicated to this kind of work, with employees numbering in the thousands.

North Korea's most famous forays into videogaming are still its propaganda titles, though. The state has truly embraced gaming as a means to communicate its messages to both its own citizens and to loyalists in South Korea. Several games have been produced to promote North Korean messages, many of which involve acts of brutality against an opposing political leader.

MEXICO

Latin America has been pegged as one of the main growth areas for game development in the near future, and Mexico has been leading that charge as a territory that is estimated to be worth \$1 billion to the videogame industry by the end of the decade.

Immersion Games developed a number of the country's best-known games, including *Lucha Libre AAA Héroes Del Ring*, *Monster Madness* and *CellFactor*. But while production was once shared between its Guadalajara and Bogotá, Colombia, studios, the Mexican branch of Immersion has now gone independent and become Larva Game Studios, which is working on an apocalyptic alien invasion game called *Last Day On Earth*.

The country has attracted major publishers such as Square Enix to recently set up offices here, but in the coming years it may become more well known as an indie hub, since homegrown talent incubators such as Juego De Talento have reportedly received hundreds of applications for funding and guidance.

Indie success isn't a far-off dream, though. Squad has already found an international audience with *Kerbal Space Program*, its game of rocket launches and interstellar exploration, which launched in alpha form and has steadily built a highly engaged following around an active modding community.



Kerbal Space Program tasks you with building your own rocket, entering orbit, and visiting moons and planets

ARGENTINA



Fernando Ramallo and David Kanaga's *Panoramical* is a dynamic soundscape that changes due to your inputs

Argentina is one of several South American countries that have become farms of creativity. When companies want to outsource at low cost and still make games with beautiful animation, they come here. QB9, for instance, creates licensed webgames for several media networks, including Comedy Central.

Argentina was one of the first South American countries to be recognised for its indie scene, thanks largely to the celebrated works of **Daniel Benmergui**, who created *Today I Die* and *I Wish I Were The Moon*. He's also the man behind *Storyteller*, which was honoured at 2012's IGF. He says that regardless of the growth of gaming in South America, it is hard to escape the influence of American games.

"My games are no exception," says Benmergui. "We imitate ideas, conventions, even wording, but something is not quite right and feels out of place. Even very good games, like the *Uruguayan Kingdom Rush*, feel a bit like that.

"Eventually some local developers will figure out what it means to make a 'culturally local' game. I am not even sure what it means, but it is certainly not just using tango or Argentinean [historical] characters... It would reflect on how the game itself plays."

What a number of Argentinian games seem strong in is creating atmosphere. There's the poetic tone of Benmergui's work, the abstract interactive music game *Panoramical*, and creepy indie horror games *Doorways* and *Asylum*. Each is an indication that this country has developers with an appreciation for how to build a mood that transcends a modest budget.

BRAZIL

Despite Brazil being the sixth-largest economy in the world, the development scene here has more or less kept pace with its smaller peers in the region, such as Argentina, Chile and Colombia.

"Here in Brazil, investment in game development is almost invisible, if there's any," says **Thiago 'Beto' Alves** of indie developer Aduge. "Every indie studio – including Aduge – I know of is paying to work. The government cripples [us] with taxes, and there's no deduction program to help small companies."

It hasn't stopped independent developers from creating games, though. Aduge just released its first commercially available title, a top-down stealth game called *Qasir Al-Wasat: A Night In-Between*. There are now dozens of indie companies working in Brazil, but it's a relatively recent development. Until now, Alves says, indie development was seen as a means to develop a portfolio to get hired at a major studio, not as a fully fledged enterprise of self-expression.

But it's not just indies working in the region – there are over 100 studios here, most of them dedicated to advergames or providing outsourcing services. More excitingly, the Brazilian government has recently included interactive books and games as part of the public school curriculum for 2015, which will create a demand for educational software developers.

That's just part of a potential sea change here. "There are a tremendous amount of talented game creators in Brazil that are finally getting a fair shot at commercial viability thanks to digital platforms and freemium business models," explains **Jason Della Rocca**, co-founder of indie incubator Execution Labs. With the growth of Steam, iOS and Facebook, as well as the early signs of governmental interest in gaming, Brazil may soon emerge as a much bigger player.



Dungeonland has fourplayer dungeons and an amusement park theme, albeit a park designed to kill thieving 'heroes'

BELARUS



Wargaming.net has been rapidly expanding since 2010, acquiring both Day 1 Studios and Gas Powered Games

The story of game development in Belarus is the story of a single company, but that company has the potential to reshape the entire region. Wargaming.net has been in business in Minsk since 1998, mainly working on niche strategy games such as 2003's *Massive Assault* and 2009's *Order Of War*. But it was 2010 free-to-play hit *World Of Tanks* that catalysed the company into becoming a global juggernaut.

For the past five years, Wargaming has been steadfastly focused on mid-20th-century military strategy games, and the company has exploded in size as a result. It's a phenomenon that Wargaming CEO **Victor Kislyi** says is tied to the dramatic history of Belarus and the surrounding area.

"Belarus saw more battles during WWII than any other country in the USSR," he explains. "The country spent four years under Nazi occupation, lost every third citizen to the war, and saw entire villages simply erased off the map. Belarusians take pride in their victory... No matter how much time has passed since WWII, the memories continue to live on, and so does the interest for it. For this reason, the love of military warfare is a common thing and, at Wargaming, we transferred it into the sphere of digital entertainment."

One big hit can be all it takes to forge a local industry, a crystallising moment that draws attention to the fundamentals underpinning that game. "I believe that the success of *World Of Tanks* has sparked interest for the country's IT sector in foreign investors," says Kislyi, "which in turn might be useful for Belarusian developers once they decide to step into the global gaming market. They have the knowledge, creativity and expertise it requires, but it will take time."

"The games sector is still in its infancy, though. Most studios do outsourcing projects for western companies or target social and mobile segments, [because] they don't require big budgets and the development cycle is shorter compared to triple-A titles. Competing with industry tycoons who started in the late '80s is just out of the question for game developers from Belarus, so they prefer to play small."

Wargaming is far from the only developer in Minsk, but its colossal size dwarfs all others' efforts, even successful ones such as Vizor Interactive's mobile game *Zombie Farm*. Despite this, Kislyi believes that the Belarusian game industry can't be built on the popularity of a single company alone. "Belarusian studios will have to deliver many more hits before they reach the level of Poland," he says.

Eastern Europe has seen some of the fastest-growing development scenes of the past five years, with both Poland and Ukraine emerging from relative obscurity onto the international stage with games such as *The Witcher 2* and *Metro 2033*. As talent and knowhow spreads, it seems possible that Belarus could be the next territory to join the Eastern European gaming renaissance.

TURKEY

The stars of Turkish development are undoubtedly TaleWorlds' *Mount & Blade* games, which mix action and strategy. Primarily set in a fictitious medieval world, but with forays into both 17th-century Europe and the Napoleonic wars, the series has won an international following. And more is on the way, with TaleWorlds announcing late last year that *Mount & Blade II: Bannerlord* is in the pipeline.

Mount & Blade draws on Turkish history as a country that sits at the crossroads between many different ways of life, being seated between Europe, Asia and the Middle East. In similar fashion, *Mount & Blade*'s fictional setting pits five kingdoms with vastly different cultures in an ever-shifting war for territory.

While most of the countries that are coming onto the international scene began working in the past five to ten years, Turkey's game development history dates back all the way to 1993 on the Amiga. Back then, developers Silicon Worx and Flash Computer created obscure titles such as strategy game *Umut Tarlaları*, and the fantasy-RPG *Legends Of Istanbul*. But after a promising start, development here went into stasis until the mid-2000s. One game of particular note is Motion Blur Game Studio's *Kabus 22*, an action-horror hybrid made in the Gamestudio engine, which has been submitted for approval on Steam Greenlight.



In *Mount & Blade*, a sandbox strategy game, the player can rise from a commoner to grand marshal of the realm

IRAN



Garshasp is a visually striking game based on the hero from Iranian mythology and Zoroastrian literature

Iran's history with games is characterised by its political and cultural backlashes against western-developed titles, particularly American shooters, which can fail to offer even-handed images of Islamic cultures.

Iran's government has often accused the United States of using games as vehicles for anti-Islamic propaganda, and has fired back with state-sponsored work of its own. *Battlefield 3*, for instance, was seen as part of a US media war against the nation, despite being made in Sweden, and was summarily banned. The inflammatory *Attack On Tel-Aviv* is also reportedly being developed in direct response to DICE's shooter.

Many Iranian games are overtly nationalistic, since the government plays a heavy role in promoting the use of games to advance local culture. In fact, Iran may be one of the most progressive countries in the world when it comes to communicating sociopolitical messages through videogames. Take, for example, the descriptively named *The Stressful Life Of Salman Rushdie And Implementation Of His Verdict*, a game currently in development centred on the importance of the fatwa against the author.

It's not all political, though. Iran has taken to gaming to communicate its own culture through the creation of the *Garshasp* series, a *God Of War*-like based on Persian myth. Ironically, the series was taken over by Dead Mage Inc, a US studio, in 2010. ■



Block Party

Indies love them,
and big studios
host their own in
a bid to kickstart
fresh projects.
How did game
jams become
such a valuable
part of modern
game making?

Game jams have captured the imagination of an industry. Hardly a weekend passes without one somewhere in the world. Every Friday evening, a quick scroll of Twitter reveals groups of developers hunkering around a chatroom or hashtag and preparing to spend the next 48 hours working on their outlandish game ideas. Many are organised between groups of friends, while others have become global events drawing the attention of tens of thousands of participants.

It's not just the indies: game jams are also starting to creep into studios, with developers such as Double Fine and Ubisoft incorporating them into their work schedules. But just what is it that is so alluring about game jams? Are they a magic bullet of innovation? Or is this just crunching taken to its inevitable conclusion?

One of the 30-odd developers who took part in 2002's inaugural Ludum Dare 0 was **Mike Kasprzak**, who today is one of the competition's head organisers. "Geoff [Howland, founder] didn't really have the time to keep running the event," he explains. "But all of us who participated craved this. We were really excited [and] really enthusiastic about Ludum Dare, so we literally took it over for him."

Kasprzak and a ragtag group of developers knew that Ludum Dare had tapped into something special, and they did whatever they could to make sure it continued to run. "It kind of floundered for a while before we got our act together," he explains, but that all changed after Phil Hassey's creation for

Ludum Dare 8, *Galcon*, became a critical success. Kasprzak recounts how Hassey was instrumental in finally getting the Ludum Dare competition a proper home on the web. "Phil was like, 'Dude, I want to do this. I want this to keep going, because this is important.'"

Now, after 11 years and 26 events, Ludum Dare is perhaps the best-known game jam in the world. "Today it is super big and huge – thousands of games per event. It's madness. The idea of Ludum Dare, to just make a game in such a short period of time, just resonated with people and created something else. It snowballed until we were able to make this happen all the time."

Ludum Dare isn't alone in its success – thousands of games are produced at such events each year. One of the biggest is the Global Game Jam. Founded in 2008, the 2013 event attracted 16,705 developers from 63 countries, who produced a grand total of 3,248 games.

But why have game jams become so popular? What do they offer game developers? "The thing that stops a lot of people making games is expectations about levels of polish, about a certain level of quality," explains developer **Anna Anthropy**. "If you only have hours, you don't give a shit about any of that. You just have to keep making it if you want to get it done. So in that way I think it helps a lot of people get over their insecurities about making shit. They just make it."

Kasprzak also highlights the way that game jams offer a safe space for developers to create something that isn't finely honed. "You don't have time to create the perfect system. You're running out of



Anna Anthropy,
game developer



Mike Kasprzak,
game developer
at Sykronics

time every minute. It forces you to just sit down and do what you can quickly, which is a really good mindset to get into."

Independent designer **Harry Lee** is a prolific jammer. At 2011's Ludum Dare 22, his team's game, *Midas*, won four medals. For Lee, one of the strengths of game jams is that they motivate developers to actually finish a project. "That helps a lot of people, since they fall into a trap of not ever finishing a thing, or even starting a thing, so that works really well."

Lee also highlights the way jams work to help developers hone their craft, teaching them about their voice and how to set the scope of projects. "I have dozens of game prototypes that I've produced from jams, and I think that body of work is necessary for finding a style that suits you."

"If you only have hours, you don't give a shit about polish"



Harry Lee, game designer at Wanderlands

Jams are about volume, about making a volume of work to hone your skillset and craft."

Game jams give developers a reason to start a game, the obligation to finish, and the safety net to fail. But perhaps most importantly, they surround participants with others who are doing the same.

"I really like the energy of being in the physical room with the people," says Anthropy. "You just shout out ideas at each other, and if I need sound effects I can just pull someone over and have them talk into my game. Yeah, the energy is real good when you do it in the same physical space."

But even for game jams held primarily over the Internet, such as Ludum Dare, that



Ludum Dare had its 26th iteration in late April, and was based on the theme of slaughter

sense of community is a driving force. "By [Ludum Dare] existing, it gives people enough extra inspiration to make that step, that extra push to sit down and do something, because you are participating in this event," says Kasprzak. "I'm not just doing this myself. We're all doing it together, and that's inspirational."

The traditional game jam model sees teams given a theme – typically a word or phrase – from which they'll spend the next 48 hours prototyping an appropriate game, often at the expense of sleep and personal hygiene.

Lee, despite his own enthusiasm for jams, is concerned about just how passionately and uncritically this one model has been embraced by developers. "I think [game jams] serve a very important purpose, but I think it is a very specific purpose, and I think sometimes they are extended beyond their use. Every game jam, the way it is set up and the format it has, will directly lead to the kinds of games that come out of it."

The concern is that only participating in a certain kind of jam means you can only make a certain kind of game. "When new people go into a jam, they are learning all these fundamental and important ideas about what games are, but that can also

be really normative if they aren't coming from an experimental angle," says Lee.

Fortunately, then, the last 12 months have seen a proliferation of jams that break away from the traditional model. Jams such as Molyjam, The 7 Day FPS Challenge, and Fuck This Jam all constructively deviate from the norm. "I think it is great that the structure and definition of a game jam is crumbling and diversifying," says Lee. "We need to see different kinds of jams."

When **Anna Kipnis**, senior gameplay programmer at Double Fine, casually tweeted that there should be a game jam to bring to life the outlandish ideas of Twitter parody account @PeterMolydeux, she sowed the seeds for Molyjam, one of 2012's most popular and unusual jams.

While Molyjam still followed the traditional model insofar as teams had 48 hours to make their game, the nature of it meant participants knew the theme well in advance. For Kipnis, this was one of the jam's major strengths: "I've always wanted to be in a public jam, but [not knowing the theme until you show up] was always really intimidating, in that often I would find out the theme was just one word like 'extinction' or something. It's only enough to tip you in the right direction, but not enough to really push you towards something... So I thought, 'Hey, I would totally be a part of [Molyjam], because even if I get stuck, I can just pick another idea.'"

Even further departures from the traditional jam model are The 7 Day FPS challenge (organised by Vlambeer's **Jan Willem Nijman** alongside Sos Sosowski and Sven Bergström) and Fuck This Jam (organised by Vlambeer's other half, **Rami Ismail**, alongside Fernando Ramallo).



Anna Kipnis, senior gameplay programmer at Double Fine



Molyjam spawned an explosion of surreal games based on the impossible pitches of @PeterMolydeux

While traditional game jams might tempt developers to rely on normative ideas as a crutch, both 7DFPS and Fuck This Jam, much like Molyjam, force their participants to think beyond their usual boundaries.

Nijman had the idea for 7DFPS after he spent time working on Vlambeer's own *Gun Godz*. "A lot of indies have this preconception of firstperson shooters being dumb, triple-A shit," he says. "Getting indies to start making things in that genre gave it more new ideas than the last ten years of big budgets did."

Dozens of the games made for it have taken the genre in absurd new directions. A standout is Wolfire's *Receiver*, a hyperrealistic handgun game that forces players to, among other things, load individual bullets into the gun's magazine.

Similarly, Fuck This Jam – itself eight days long – aimed to get developers thinking outside of their comfort zone. "It's a simple enough thing to make something new in a genre you like, but it's extremely difficult to make something in a genre you dislike," explains Ismail. "Making something outside your comfort zone is something that definitely allows you to make new things. Not having references forces creative solutions that might be forgotten by people who know the standards of the genre."

Fuck This Jam entrants ranged from snide parodies, such as Sos Sosowski and Zoë Quinn's 'match-one' puzzle game *Crystal Crashers*, to sincere desires to understand disliked genres, notably Adriaan De Jongh's harrowing 'not-game' 52.



Jan Willem Nijman, game designer at Vlambeer

A JAM FOR EVERY TASTE

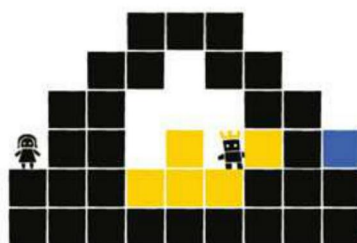
Nowadays there are almost as many kinds of game jams as kinds of games – enough for anyone to find a style that suits them. In March, NASA held a space-themed jam at its Ames Research Centre. More modestly, April's Pulse-Pounding, Heart-Stopping Dating Sim Jam saw developers from around the world gather around the #PPHSJAM hashtag to try to improve videogames' notoriously poor treatment of romance. For the brave, website Glorious Trainwrecks runs the extreme Klik Of The Month Klub, a jam that gives developers a mere two hours to craft their game. At the other end of the spectrum, for those possessing real endurance, One Game A Month (#1GAM) aims to get developers making games and making them regularly.

What all these alternative jams share is a building of the theme into the structure of the jam itself. "If you really like the theme, just come – that's how we tried to do Molyjam," says Kipnis. "Having those stronger ideas to start with, I think that is what makes these jams a bit more successful [than the traditional jam model]."

Considering both Ismail and Nijman's passion for jams, it comes as no surprise that they are a vital component of Vlambeer's creative output. "I'd say every project we release was conceived of during either a self-imposed game jam or a public game jam," Ismail says. "There's something in working feverishly for a day or two that just forces you to take the absolute core of an idea and work on that – and that is exactly the type of game we make."

While Vlambeer typically spends months polishing that initial jammed idea, it joined *Minecraft* developer Mojang in February to prototype games over a four-day 'Mojam' for a Humble Bundle. Customers were able to order bundles of the games even as they were being jammed on, and the games were shipped after the jam was over. Even though all the profits went to charities, it was a significant mutation of the game jam template, moving it from an exercise to hone developers' craft to one used to take ideas from concept phase to product in a short time frame.

Such examples also reflect how game jams are beginning to permeate studio cultures more broadly, even if they're being used to just blow off steam. "The first-ever game jam we had at Double Fine was just as stress relief," says Kipnis. "We'd been working on *Brütal Legend* for, like, three years. We were all pretty excited about the game, but, man, three years is a long time... So Tim [Schafer] was like, 'Hey, why don't we try to make completely different games? Let's just see what this engine can do.'"



Created for Ludum Dare 22, Harry Lee and Jarrel Seah's *Midas* is a simple but elegant platformer where the player takes on the curse of King Midas, turning everything they touch to gold

And so *Amnesia: Fortnight* was born as a chance for the team members to simply forget what they were working on for a while. They could pitch ideas and the studio would split into smaller teams to develop new prototypes over a two-week stint. "There was no real agenda aside from giving the team a break, and I think that was a really good place to start," says Kipnis. "There's not much risk; you're just trying something out. It's no big deal. And it just so happened that a lot of cool ideas came out of it."

Cool, but also lifesaving. Once *Brütal Legend*'s sequel was dropped by EA, it was turning these prototypes into shippable products that kept Double Fine afloat. Out of the first *Amnesia: Fortnight* came *Once Upon A Monster* and *Trenched* (or *Iron Brigade*). The next year, *Costume Quest* and *Stacking* were born. In more recent times, Double Fine has made the *Amnesia: Fortnight* more open, allowing the public to vote on which pitches are worked on, and allowing them to purchase the prototypes directly through the Humble Bundle site, much like Mojam.

Likewise, Ubisoft Montreal ran a program during the development of *Assassin's Creed III* called 50 New Things. Every Friday for eight weeks, team members had the chance to work on their own ideas for prototypes that could plausibly find their way into the game.

ACIII creative director **Alex Hutchinson** explains that the programme came from a desire to give the game more personality. "In such a long project, people can get caught up in just delivering their part of the game, and while they have a lot

HUMBLE START

Besides *Galcon*, game jams have spawned countless prototypes that have then gone on to become indie darlings. In 2009, Adam Saltsman made a game for the long running Experimental Gameplay Project's 'bare minimum' month and created *Canabalt*, thus birthing an entire genre of endless runners. In a personal 24-hour jam in 2010, Mike Bithell created a prototype that would go on to become *Thomas Was Alone*. At the 2011 Toronto-Ontario Game Jam (TOJam), Kenneth Yeung and Mike and Vic Nguyen created a time-travelling *Contra*-like game that is now well on its way to becoming *Super Time Force* (see p66). And when Terry Cavanagh participated in a 48-hour jam to contribute to the 2012 Pirate Kart, he created a game called *Hexagon*, the core of which he would later fine-tune into *Super Hexagon*.



Alex Hutchinson, creative director at Ubisoft

of ownership of their section, we wanted people to really feel like they put their own fingerprint on the game."

Out of the programme came sidequests, featuring a headless horseman and a Sasquatch, and many other secrets that Hutchinson claims still haven't been widely discovered. "Which is fun. I like Easter eggs and special content for those people that really dig into a game."

But as game jams start to be used to make parts of much larger studio projects, at what point do they just become an excuse to normalise crunch culture?

At Ubisoft, Hutchinson stresses that his team made a conscious effort to incorporate 50 New Things into usual work hours. But, he concedes, some people did

"We want people to feel like they put their fingerprint on the game"

indeed end up putting their own hours into their projects. "It's a difficult balance. We don't work in a factory; we work in a creative industry that's often based on new technology, which makes it much harder to be as predictable as we would like, although that should never be an excuse for bad or absent planning.

"For me, crunching is negative when you're working overtime just to make something function because someone asked you to do it, but it's positive when you feel like putting in some extra hours to make something amazing or personal. We tried to get into that second space."



Bossa Studios' *Surgeon Simulator 2013* was one of the most popular games to emerge from this year's Global Game Jam, and it's available on Steam. It is to open-heart surgery what *QWOP* is to running a 100m race



Don't Deaf It puts you in charge of a pigeon charged with preventing jumpers from committing suicide

For Kipnis, crunching and jamming are completely different experiences. "On crunch, you're just trying so hard to push that baby out the door. You've been working on it [for ages], and it is no longer this fresh and exciting thing. For a game jam... it's like all the things you think working on games would be like. It takes just a few weeks and everyone is super excited about every new feature that comes in. That's usually not how games are made, but that *Amnesia* [*Fortnight*] two-week period gives you that glimpse. It's like a little fantasy come true."

"The parallel is they both exhaust you," says Ismail. "The difference is that a jam's self-imposed and a creative exploration. It allows you to do things you normally wouldn't. Crunch is just a final tour de force to do something that probably should've been done two months ago but wasn't."

Jamming might share more than a passing similarity to crunching, but in doing so it brings game development in line with other types of creative media, tapping into the apparently bottomless well of energy that comes into play when embarking on something new and exciting. While any one model of game jam can only achieve so much, each new jam gives developers the motivation to push outside of their familiar territory and see what's out there. ■

PLAY

REVIEWS. INTERVIEWS. PERSPECTIVES. AND SOME NUMBERS

STILL PLAYING

BioShock Infinite 360, PC, PS3
Is it OK to talk about the ending yet? Don't worry, if the Internet hasn't spoiled it for you, we won't. Still, it's rare that a game makes us want to dive back in so quickly after finishing, and we certainly haven't seen everything. The hunt is on for those last few Voxophones, and we're eager for another viewing of Columbia through eyes changed by a first playthrough. Trust Irrational to bring a whole new dimension to the term 'replay value'.

Dishonored 360, PC, PS3
The trouble with giving players freedom is how free they are to spoil the game. The potential highs are higher, but the lows can be game-breaking. On one play, *Dishonored* was a bad platformer; on another, it was a frustrating quickload quest for perfection; on yet another, it was a series of brutal laryngectomies. It's only when you're proficient with all *Dishonored*'s systems that its depths are revealed.

Thomas Was Alone Mac, PC, PS3, Vita
Mike Bithell's open-hearted indie platformer shows you don't have to add googly eyes to an object to lend it a veneer of personality. By simply assigning a name, colour and dimensions to his cast of quadrilaterals, they turn from abstractions into relatable entities. *Thomas Was Alone* testifies to the centrality of the written word in narrative-driven games. A richly textured yarn can breathe life into the crudest of visuals.

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Why the end of the world still needs humanity

Perhaps it's inevitable that a medium as focused on the creation of rules as videogames regularly gravitates towards post-apocalyptic settings. They provide the ideal blank canvas, after all, for development teams to stamp their own ideas onto Earth-like environs, but free them from the constrictions of a reality full of wearisome individuals who don't spend their days worrying about zombie hordes or alien menaces. Should studios be so quick to give up on society? A post-apocalyptic world still needs human ideas and constructs to riff on, otherwise players will be left with little reason to care.

This month, we navigate three apocalypse-blighted worlds, each presenting its own depressing vision of a ruined Earth – albeit two of them unintentionally.

Dead Island: Riptide (p104) repeats its forebear's mistake of squandering a promising setting on characters and gameplay as rotten as its undead antagonists. For all Techland's attempts to frame the suffering of its island's inhabitants, the only convincing suffering is experienced by those playing it.

Defiance (p100) fares slightly better, benefiting from the osmotic seep of a lore that was created for its TV series counterpart. But you'll be hard pressed to notice most of it in a game that consistently misunderstands the weight of its own origin story. 4A's *Metro: Last Light* (p96), however, manages to make you care about the destruction around you by not only showing you remnants of the world that came before, but also by portraying survivors of its fall trying to keep their memories alive.

Although overused, a trusty post-apocalypse remains one of the most potent backdrops against which to set a game. But without a human heart to give it poignancy, you might as well wipe the slate clean with any other contrivance.



Metro: Last Light

Dilapidation has never looked this beautiful. Not even *Crysis 3*'s post-apocalyptic urban decay can stir up the feelings of loss and melancholy that *Metro: Last Light*'s network of underground tunnels and above-ground wastelands conjure. In *Last Light*, 4A Games delivers an artistic masterclass on how browns and greys should be used to build atmosphere, but what really makes the game's crumbling Moscow stand apart are the incidental details that tell its story. You'll see skeletons embracing in abandoned stairwells, traffic lights used in place of dancefloor lighting, and the remnants of children's toys lying abandoned near where their owners fell. The world 4A Games has created has more than enough heart to match its brawn.

It's a template set out by the game's 2010 predecessor, *Metro 2033*, which was an ambitious attempt to reconcile a gritty story with firstperson gunplay and stealth, rather than simply interleave them. 4A Games nearly succeeded, delivering a game that was more firstperson adventure than FPS. It may have been let down by rickety shooting mechanics and a less-than-friendly user interface, but what it lacked in polish it more than made up for in ambience. Three years and a switch of publisher later, 4A has attempted to work that polish into *Last Light* without sacrificing any of the elements it got right the first time around.

Foremost among its improvements is the way *Last Light* handles stealth. Making a mistake in 2033 instantly alerted every enemy to your position, and whether you were hidden safely from sight wasn't always clearly telegraphed. It was a frustratingly obtuse system, even if it did evoke plenty of tension. In *Last Light*, a blue lozenge on returning protagonist Artyom's always-visible watch lets you know when you're in shadow, and a stab of strings serves as a reminder of the danger when you venture from the gloom. While this solution feels more binary, and occasionally relies on patrolling enemies developing temporary glaucoma, it remains readable at all times and makes you feel deadly.

Enemies can be distracted in a number of ways, too, such as making a noise, turning out the lights, or creating a fire by shooting at an oil lamp. But while you can toy with them, they also have the tools to swing things in their favour. Flashlights will force you out of hiding places, and your foes will sometimes tip over scenery to create temporary cover. One preferred method of ours was to methodically extinguish every light source in any given area, then go on the hunt with retrievable throwing knives, preserving our meagre supply of ammo and keeping noise to a minimum. After all, even silenced weapons will give you away if you're too close to a guard when you use them.

Better still, enemies are no longer psychic and will actively, and indefinitely, search for you if alerted by the body of a comrade, or a stray shot bouncing off their

Publisher Deep Silver
Developer 4A Games
Format 360, PC (version tested), PS3
Release May 14 (US), 17 (EU)



www.bit.ly/13UUi77
 Screenshot gallery

Last Light's tunnels never feel like a procession of shooting galleries – unlike many of its peers

helmet. You can, of course, go in all guns blazing and make use of the wealth of destructible cover to reload rather than hide, but you'll face additional – and more heavily armoured – firepower if the alarm is triggered.

No matter how much noise you make, though, it's always possible to hide again, and even sneak past the remainder of the forces left searching for you. And it's a thrill when you hear soldiers talking to each other as they close in on the position of your most recent muzzle flash, safe in the knowledge that you're already moving on – or about to slit their throats.

As a result, each room feels like a self-contained puzzle that can be tackled in a variety of ways. Play ebbs and flows between different states without ever jarring you out of the moment, encouraging experimentation. Importantly, *Last Light*'s tunnels never feel like a procession of shooting galleries – unlike many of its peers. Sure, it doesn't offer a shooting experience that matches the heft of more traditional FPSes, and stealth is almost always the best option, but things have improved a lot since Artyom's last trip across the Metro. While guns still feel weak, a well-aimed headshot is enough to drop almost any enemy. Weapons here are meant to be unreliable, too, having been cobbled together from leftover parts. They often fire ball bearings or low-grade bullets, and will jam or run out of pressure when pushed too hard. Military-grade bullets can be used as well if you need them, but they double as currency for trading in shops. Perhaps it's fitting, then, that *Last Light*'s firearms don't feel overpowered, but your willingness to accept this as an immersive detail, rather than a gameplay failing, will rely greatly on your investment in the fiction.

It's an easy investment to make, since the world of the Metro is rendered more vividly in *Last Light* than ever. Taking place immediately after the events of 2033, it sees Artyom return leaner and more capable following his previous ordeal, but burdened with immense guilt due to his part in the genocide of the mysterious Dark Ones. Unsure of his past actions, he now faces a new threat as reinvigorated Nazi and Communist regimes struggle to gain control of the Metro, while the discovery of the last surviving Dark One provides the opportunity to redeem himself. It's a setup that enables 4A to manipulate your fear of its world even as it cleverly builds pathos for the otherwise-terrifying feral mutants that roam this irradiated Moscow and highlights the cruelty that mankind is capable of. That's not to say your journeys into the darkness are without terror – one trek off the rails to power up a blast door is particularly chilling – but some of the scenes you'll encounter in fascist-occupied areas further down the line are far more horrifying than anything you might run into in the darkness of the tunnels.



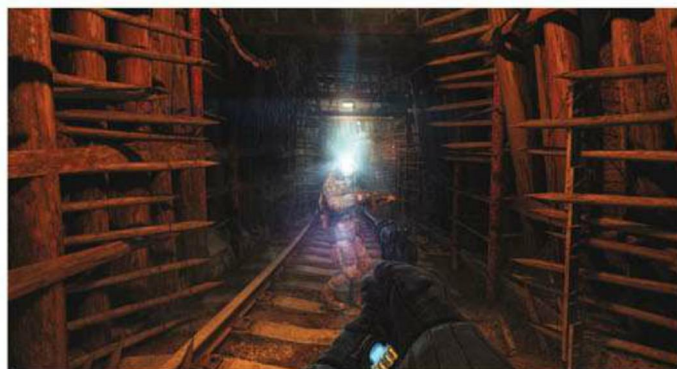


ABOVE Wind and rain will batter you outside of the Metro, and you'll need to wipe your gas mask often to keep your vision clear. Your watch counts down to let you know much longer your filter will last before you need to replace it.

RIGHT You'll be supported along the way by various NPCs, some of whom will accompany you for long portions of your journey. Switching to the optional Russian soundtrack makes these characters feel more authentic, but you'll lose large parts of the backstory unless you happen to speak the language



BELOW As in 2033, entering the tunnels is a risky, often terrifying, prospect. Mutation has continued apace, and you'll find all manner of new horrors between you and the next point of safety. You also have to watch your ammo more closely away from human-occupied areas



ABOVE You'll often find yourself in vents or pipes and eavesdropping on conversations. This means the game rarely has to fall back on cutscenes to deliver its story, and you'll get back into the thick of the action sooner



The civilians you meet along the way, meanwhile, are drawn with compassion and subtlety, even when you stumble across a den of iniquity in your hunt for a man who's betrayed you. But it's Anna, a capable sniper in the resistance and your companion for some of the way, that really sticks in the mind. Your relationship with her is equal parts affecting, funny and heartbreaking, even if she's not quite as well realised as *BioShock Infinite's* Elizabeth.

Anna isn't the only comparison we can draw between *Last Light* and Irrational's triumph. *Last Light's* world-building is the equal of *Infinite's* astonishing journey, colouring its world with mechanisms, gadgets and decor appropriate to the culture it showcases. But whereas DeWitt is an interloper fighting his way through an unfamiliar world, Artyom is both a denizen and a hero of his battleground. He's not just fighting an enemy, he's fighting for his home. It's a distinction that adds significant weight to your objectives and, together with the astonishing detail of the Metro's destroyed beauty, even makes Columbia feel like a fairground ride in comparison. That's not to say the latter doesn't have a strong sense of place, but its propaganda façade and the dark reality beneath are juxtaposed to such an extent that they often feel segregated into two halves.

Sadly, the run-down, unreliable nature of *Last Light's* world occasionally spills out into yours. Jumping up to ledges or across distances, for instance, can feel sticky and ill-defined. You'll learn to compensate, but it's frustrating to fall into dangerous waters after missing a two-foot gap between a pair of sunken train carriages. And for all that detail, you'll sometimes come across a



BILLOW STANDARD

There's a moment about halfway through the game when you're provided with a vehicle. When you enter the room, it's lying under a sheet that looks exactly like all the other static cloth textures you've seen before. Then the NPC who's handing you the keys flicks the sheet back to reveal his creation, and rather than look at the car, you'll find yourself entranced by the billowing, PhysX-powered cloth dynamics that see it crumple away into a heap. It's the kind of moment that may look laughably outdated in a few years' time, but we couldn't help but hit quickload just to geek out and watch it again.

ABOVE Flying mutants, known to locals as 'Demons', are a common threat when you step outdoors, necessitating a close eye on the sky as well as the shadows. They can be felled, but remain a terrifying enemy to face

ladder in the middle of a fraught battle that turns out to be merely set dressing and offers no hope of escape.

Moreover, in keeping with the game's setpiece-heavy nature, 4A regularly employs position-holding objectives and on-rails turret sections, which don't feel out of place in the narrative, but have the unfortunate side effect of drawing comparisons with less-inspired firstperson shooters. The infrequent boss fights aren't always enjoyable either, and one particular scripted event is ripped wholesale from the first *Metro*.

2033's general lack of signposting also makes an unapologetic return. You'll be left without direction often, which is partly because 4A wants you to feel lost when you're above ground and spending time away from the funnelling nature of tunnels. Still, when you're down to your last few bullets, close to death and battling aggressive, respawning creatures with no idea where to go next, frustration will creep in. But the absence of compromise can also be read as a sign that 4A trusts in its players' intelligence.

The studio's willingness to experiment within its chosen genre has resulted in a game with a standout character. *Last Light's* pacing — switching as it does between tight tunnels and wide-open abandoned spaces, explosive gunfights and creeping horror, stealth and socialising — could have felt disconnected in the hands of a less-talented developer. Instead it lends its world uncommon depth. The trade-off for a distinctive personality, of course, is that *Last Light* is occasionally unyielding, but the desire to see what waits in its next tunnel remains a powerful draw throughout.

Post Script

Interview: **Andrew Prokhorov**, creative director

The turbulence of *Last Light*'s world is reflected in its gestation. The ambitious, but small, team had to abandon a planned multiplayer component when resources became stretched too thinly, and then the collapse of THQ left the studio without a publisher until Deep Silver snapped it up. We talk to creative director **Andrew 'Prof' Prokhorov** about negotiating the grim realities that surrounded the game.

What was the atmosphere like at 4A in the run up to THQ's eventual collapse?

Right up until the auction, it was business as usual. We knew there was a risk that THQ would be broken up, but also a very real chance that their backer, Clearlake, would win the bid. For us, we were on the final leg of development, so we just got our heads down and kept working. Until we heard otherwise, we were still shooting for a March release date!

Did you ever feel that *Last Light* was in jeopardy?

We were pretty confident that, whatever the outcome, we would find a way to release it — either with THQ or someone else. The game was almost complete, had a strong fanbase, and a lot of marketing spend behind it. The only potential issue could have been some kind of legal wrangling, which fortunately we avoided.

How did the switch to Deep Silver affect you?

It was a very disruptive time. Having to renegotiate our contract definitely held up development, too. A publisher handles game testing, QA, submission, manufacture... It takes a little while to get to know how a new partner works. But with the release date pushed back to May, we more than made up the time we lost and were able to spend more time on polish. So for the important people — the players — they're getting the same game, just a bit later and a bit better.

Why did you drop *Last Light*'s multiplayer?

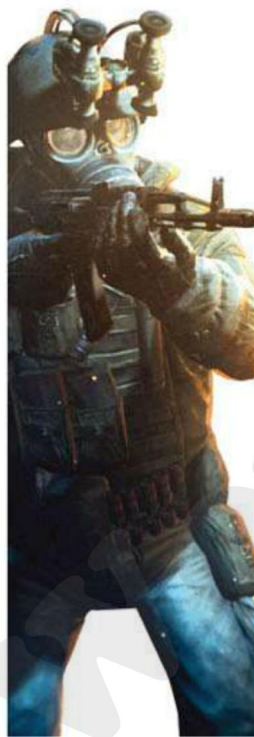
It was a tough decision. At first the studio really wanted to keep it. THQ said, "Guys, we think this is too much for you. Can you finish the singleplayer and this on time?" "Sure!" we replied. Then we had a look at where we were, and there was a lot of work to do. The concept was good, and the gameplay was good, but too much content needed too much time to make it really great. So we admitted that THQ was right and decided to focus on singleplayer.

Do you feel that you made the right decision? Are you disappointed with its absence?

Looking back, we made the right decision. The response from the fans and the media supported this. And



"It is a matter of pride that we can compete with some of the biggest studios that have huge art departments"



though we are maybe a little sad it's not in the game, we have spent a lot of time on it, so it's there when we decide to return to it.

Can *Metro*'s world sustain a multiplayer component without compromising the fiction?

The world of *Metro* is a big one. Our games let the player experience that world as part of a story, through the eyes of a unique character, Artyom. But are there other ways to explore the world? Of course. We have so many ideas for different types of game that would work in the world. Multiplayer is just one of those ideas. The question is: how does the world make that idea unique?

Do you think games launching without multiplayer nowadays are at a disadvantage?

We want to make the best game we can. We have to make it commercial enough to make money, to survive. But we are making a game, not a business model. If we can make a game that is singleplayer only and sell enough to carry on making games, then we don't mind. There are clearly players out there who just want the singleplayer game.

Last Light is beautiful. Was it a challenge to get the kind of visual results you were chasing?

Oles [Shishkovtsov], our lead programmer and CTO, is always asked, "Was it difficult to [do this or that]?" The answer's always the same: it is not difficult, it's just work. We are a small studio, and we all work incredibly hard to try to 'beat' what we see from other developers. It is a matter of pride for us that we can compete visually with some of the biggest studios that have huge departments just focused on technology and art!

You've mentioned that you are a relatively small company, so how are you in a position to go toe to toe with larger studios' tech?

We're not trying to sell the technology to anyone, or make tools for other studios. It's just for us. That makes for very flexible working conditions. If we need something, we implement it. Although we are also hoping to release an SDK pretty soon.

What's next for the studio?

Who knows? Something that combines the freedom of *STALKER* with the detail and immersion of *Metro*. Another world to explore, but not a radioactive apocalypse. We have been making post-apocalyptic games for so long, and in *Last Light* we had to add more colour and light just to challenge ourselves artistically. So the next project could be anything, but it should have sunshine, blue skies... and maybe even flowers. ■

Defiance

Videogames make no secret of their infatuation with TV and film. But *Defiance* is the first attempt to create a fiction that exists across TV and videogame media simultaneously, and the promise made by production company Syfy and developer Trion Worlds is that players' actions will affect the direction of the series further down the line.

The TV show, then, revolves around wisecracking former soldier Joshua Nolan and his aggressive but loving adopted alien charge, Irisa. They are inhabitants of a near-future Earth, and survive by salvaging the hulks of the ships that brought the Votan species to the planet. Soon the pair find themselves appointed sheriffs of Defiance, formerly St Louis, in a sci-fi Western that, while clichéd, is rich in lore and reasonably well written.

Trion Worlds' thirdperson shooter MMOG take on events is set in the San Francisco Bay Area and begins in the days leading up to the first series. It echoes the show's setup, in as far as you're an Ark Hunter working with a feisty alien female called Cass, but only taps a fraction of the available lore and isn't well written at all.

Still, the MMOG mechanics are serviceable and, to Trion's credit, their integration is often convincing. The sheer scale of the ongoing struggle is lent weight by the presence of other players, and the resultant pockets of conflict peppering the expansive game world mean you're regularly presented with the option to aid fellow survivors as you travel to your next objective. But that sense of scale is sabotaged by the draw distance, with Trion shrouding the land in thick fog. Unbelievably, your scope's range can even exceed the draw distance's boundaries; our sniper-class character was often rendered impotent by the absence of character models in a distant exchange of bullets. The upshot is that you only have to see small portions of the bland environs.

A bigger problem still is the absence of a motivation to work with other players. Objectives are usually thinly disguised fetch quests or encounters where you must defend a character, usually Cass, against waves of enemies. "Thanks, babe," she'll cheerfully intone each time you save her from being bludgeoned to death. But while other players might lend a hand in the course of completing their own mission checklist, it all too often feels like there are hundreds of singleplayer games on one server rather than a united war effort.

Arkfall events, timed PvE raids triggered when pieces of the ships in orbit fall to the ground, at least provide a sense of camaraderie, but descend into monotony as you battle wave after wave of enemies and chip away at the wreckage's hefty health bar. The major arkfalls are certainly striking, with fire raining from a darkened sky as laser beams and explosions light the world around you, but you'll soon start to avoid them.

Of all the things you'd expect *Defiance* to get right, script and story should top the list. Instead, we're

Publisher Trion Worlds
Developer In-house
Format 360, PC (version tested), PS3
Release Out now

It all too often feels like there are hundreds of singleplayer games on one server rather than a united war effort



treated to some of the worst in-game dialogue in recent memory delivered by a cast of detestable characters.

"Your anger isn't intimidating," counters scientist Von Bach when Cass challenges him. "Frankly, it's sexy. Where did you find this saucy vixen?" Cass, no doubt offended by the shoddy delivery of this line, responds with the memorable: "I'm going to hit you in the face."

Presumably, this dialogue was approved by Defiance's brand guardians who, for whatever reason, simply have different standards when it comes to the interactive version of their world. That leaves Nolan and Irisa as the only two enjoyable characters here, and they show up throughout in special Episode missions. These provide the game's most entertaining and engaging moments as they chart the events that lead the pair to the town of Defiance. But, outside of the cutscenes, even they behave with the same NPC AI stupidity that plagues everyone else, often staying in place to deliver their lines while being bombarded by enemy fire.

Much has been made of the game's broad range of ordnance, and there are various upgrades to spice up your vanilla shotgun or SMG as well as a litany of bizarre alien tech. In practice, however, guns feel weak and poorly differentiated. Combat feels stodgy as a result, with even low-level enemies soaking up bullets if you miss that all-important headshot.

Your loadout is augmented by EGO powers, bestowed by an alien implant that communicates through a suspiciously Cortana-like AI. Cloak gives you a temporary shield, Decoy distracts enemies with a hologram, Overcharge makes your shots more potent, and Blur provides both a boost of speed and greater melee strength. You can choose only one power to start with, and to gain others you must expand out across a grid of smaller upgrades that are relevant to your specialisation, a task that will take hours of play. And navigating that grid, or any of the menus for that matter, is cumbersome. The interface has clearly been designed for a controller, but however you play the UI feels over-engineered and proves confusing.

It's a problem in direct contrast to the simplicity elsewhere. *Defiance* is far more accessible than most MMOGs, but that lack of depth directly contributes to fatigue setting in early. The post-apocalyptic setting, weapon customisation and even vehicle design are evocative of *Borderlands*, but Trion's weapon tree is a poor imitation of Gearbox's hook. Outside of those Episode missions, progress soon feels like a grind for higher numbers simply for higher numbers' sake.

It's early on in the game's life, of course, and we've yet to see to what extent it will interact with the TV series, but right now the tie-in feels more like themed bonus content in a generic shooter rather than an attempt to build a coherent world.

RIGHT Group encounters often feel busy and chaotic, but you rarely sense that you're a part of a coherent team. Players simply run off to the next objective once their current one is completed, seldom banding together in groups.

BELOW Enemies are excessively resilient to bullets, soaking up volley after volley in every encounter. This means they drain not only your ammo reserves, but your enthusiasm in the process



LEFT Once you've reached a high enough level, vehicles can be spawned at will, starting with a simple quad bike. You can work your way up to larger vehicles capable of carrying passengers by upgrading at the bases you find.

FAR LEFT While you can edit your character, the options to do so are limited, with a starting choice between human and one alien race. Even this has little effect on gameplay, though. Hopefully Trion will go on to include more of the races seen in the TV show

Post Script

Trion's lacklustre MMOG isn't just disappointing, it's damaging

At its heart, *Defiance* is all about coalescence. It's about the unification of species, of races, and of formats. Such an ambitious collaboration between Syfy and Trion presented a real opportunity to blur the borders between games and TV series, so how come the two strands of this fiction feel like almost entirely separate entities?

It starts with the casts. While the pilot of Syfy's show can hardly be considered Shakespearean, despite its allusions, it offers up its fair share of witty one-liners and quickly develops a number of likeable characters. Of particular note is the relationship between its central protagonists: Nolan adopted Irisa when she was an infant after killing her parents under currently unknown circumstances, so the pair have a difficult, but strong, father-daughter bond, which the show's writers have handled sympathetically.

The game, by contrast, falls jarringly short of any such subtlety. Cass, the Votan who accompanies you, is a brash, sexually aggressive reminder that well-written female videogame characters such as Alyx Vance and the rebooted Lara Croft are still the exceptions to the rule. Nolan's piquant retorts, meanwhile, are replaced by your character's stolid, unfaltering silence.

It's one of many worrying signs that Trion has misunderstood what makes the TV show work. Worse still, it leads to the disappointing conclusion that development teams and producers still believe gamers' expectations are lower than consumers of other media. Why are characters that wouldn't pass muster in the TV show acceptable in the game? And why are Cass's bra and midriff visible when the women in the show tend to wear thick coats or even hooded robes?

The disconnect is there in the thematic goals of both show and game, too. The former handles the struggle for equality and acceptance, and the difficult task of coming to terms with the loss of millions of lives after the breakdown of diplomatic negotiations between two sides. In the latter, this sci-fi take on politics and the Wild West is reinterpreted as a series of butt-kicking sorties against aliens or scavengers in which shooting first is always advisable.

That's not to say the show has no violence, but it's played very differently. The pilot episode's climatic battle to save a town from a marauding army, for instance, is given human drama by its inhabitants' cooperative efforts to defend it. Protecting an NPC you don't like while they attempt to override a door to the next group of enemies hardly carries the same impact.

And while the game occasionally explores the fiction's lore through diary entries and bluntly delivered cutscenes, it's disappointing to see an opportunity to delve deeper squandered. Where the TV show must

If the show's writers were involved in the game, it doesn't show. And if they weren't, why was that chance missed?

allude to the universe around it, Trion has the delivery mechanism to allow players to explore it themselves. Far from being set dressing, the wider story's study of immigration, xenophobia and diplomacy could have been fleshed out in a persistent, far-reaching world.

If the mechanics of *Defiance*'s shooting had offered up something fresh, the disconnect might have been easier to forgive, but even then it would be impossible to ignore the different levels of polish that have gone into the two halves of what was pitched as a coherent whole. If the show's writers were involved with the game, it doesn't show. And if they weren't, why was that opportunity missed? Surely it would have been something to elevate *Defiance* above the usual MMOG clichés? A game's pacing will be different, of course, and there will need to be more content, but this is all the more reason to enlist seasoned show writers' help.

The TV series' first season is planned to run for 12 episodes, after which the extent to which events in the reimagined St Louis and San Francisco affect each other will become clearer. But despite all the bluster around this crossover, player influence is likely to be limited.

Kevin Murphy, executive producer of the series, perhaps explained it best to attendees at the Television Critics Association in January. "The analogue I use is [that] I grew up as a gigantic comic book geek. What I loved about comics is that you could love Batman and read Batman's adventures, and if you happen to also like Superman, if you read both titles, sometimes there would be crossovers in the summer that lent an extra level of coolness to the whole thing." Hardly the picture of interlocking experiences that deeply influence each other that it feels like we were promised.

Perhaps the real issue, then, isn't the gulf in quality between the two productions, nor even the challenge of telling the same story across linear and interactive media, but that — right now at least — neither needs the other to exist. While it's true that *Defiance* constitutes an experiment and thus there are bound to be teething issues, the usual development time and budget excuses just won't cut it in the shadow of such big promises. In order for *Defiance* as an entity to feel like one cohesive world, Trion needed to match the show's production values, but what it's produced falls short of that mark.

And that is damaging either way. If the game flops, it will do little to assuage those in TV land convinced that games and media really shouldn't mingle for fear of one side hurting the other. If it succeeds, it sends the message that gamers are happy to lap up licensed games regardless of their quality. Right now, it also makes us wonder why Trion and Syfy don't feel the need to treat gamers with the same respect as TV audiences. ■



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Dead Island: Riptide

Two years is a long time in gaming, but it's nothing compared to how long a few hours in the company of *Dead Island: Riptide* seems. For all of the 2011 original's flaws — and they were legion — it was at least a shot at doing something new. It offered a sun-drenched zombie apocalypse with action-RPG combat that had limbs flying with every swing, and an open world built for teaming up with friends and running over armies of the undead with the nearest Jeep. There turned out to be little real meat on *Dead Island*'s bones, and those bones could be spindly, toothpick-like things, but at least it felt like it was trying.

That's not something that can be said about *Riptide*. It's not a sequel so much as a standalone continuation that immediately declares its creative bankruptcy by throwing in a corrupt corporate executive and talk of zombie bioweapons, then drops the four original characters and a new one — imaginatively named John — onto a new island to essentially play the first game again. There are a few differences, of course. This island has more water, and therefore boats. Some missions involve holding out against the zombie hordes, and the action is a little tighter in places. *Riptide* rehashes far more than it reinvents, though — right down to the lack of guns early on and uninspired questing — and does so without any of the novelty value of its precursor or its attempts to foster an emotional connection.

The best sequels and semi-sequels don't usually feel like this much of a cash grab, but even ignoring that *Riptide* is one of the most tepid follow-ups around, a game that sets its sights on adequacy and sometimes reaches it, but whose critical path is constantly interrupted by tripping over the endless stones it leaves unturned. No effort, for instance, has gone into fixing the way that other characters just stand around while you do all the work, or even scripting them to not constantly bark orders and whine and complain until only their cursed NPC invulnerability stands between them and falling down dead with a Scottish Dirk between the eyes. Head into the zombie-infested jungle and *Riptide*'s world is still one where you can fight your way through a dead village only to wander into a bar where a bored-looking woman glances up from the floor, asks, "Hey, what are you looking for?" and offers a good price on a set of shiny new Wolverine claws.

Raw combat fares little better, still bringing floaty weapons and flailing swings to the party, but not upgrading the action to feel notably better, or to offer any real sense of progression beyond a numbered level. You do improve — take the way you can upgrade stamina to run farther — but zombies still level up so that you're always surrounded by enemies of roughly the same difficulty, and unlocked skills are mostly unnoticed passive boosts. Collecting blueprints allows for new toys as the story unfolds, though perfectly good

Publisher Deep Silver
Developer Techland
Format 360 (tested), PC, PS3
Release Out now

**Dead Island:
Riptide's plot is
ten hours long
with all the
flavour, texture
and depth of
a single sheet
of toilet paper**

weapons are never in short supply. As before, an abundance of respawning resources makes for the most ridiculously equipped survivors ever, even with the extortionate cost of resurrections after inevitably being torn to pieces by the island's other inhabitants.

Riptide's biggest addition to the formula is that every now and then the survivors have to defend against a zombie horde, made obvious by the piles of fences that magically appear just beforehand. These sections should heighten the tension, asking you to play tactically by throwing together defences and laying mines. Instead, bad AI and too many zombies make them a chore, compounded by NPC deaths meaning automatic failure and none of your comrades having the common sense to help fix broken defences or help free each other from death grips. Usually it's a waste of time even bothering with the fences after the first wave, though, since dealing with the zombies is never as hard as it's supposed to be, and *Riptide* often gets confused by the difference between 'put this fence here' and 'throw this fence through there' anyway. It's easier to just let the zombies in and brutally put them down en masse, with the real challenge turning out to be playing Whac-A-Mole with survivors in trouble rather than actually surviving. As the progress bars get longer, these scenarios don't even get more difficult, just increasingly like prison sentences as opposed to set-pieces.

On the plus side, nothing that breaks up the tedium of the story can be all bad. *Riptide*'s plot is ten hours long with all the flavour, texture and depth of a single sheet of toilet paper. Its characters are flat, every assignment is padded out to the point of torture to hide the fact that there's no real story for most of the game, and moments of intrigue or interest are rare enough as to seem like mythical treasures. The best zombie fiction has something to say, some metaphor for life, or dark drama in a crumbling world. *Riptide* just has zombies, and a humourless, lazily written trudge through endless numbers of them. It can't even be called B-movie schlock, since that suggests a level of energy, quirkiness and self-awareness that it completely lacks.

Even ignoring all those failings — something at which *Dead Island* fans will have had plenty of practice — *Riptide*'s biggest flaw is that it never justifies its existence in terms of plot or new ideas. It's not simply yesterday's game, but a time capsule from 2011, a time when zombies weren't as overplayed and games such as *Far Cry 3* and *Borderlands 2* weren't around to cast their long shadows over the action. As with its predecessor, *Riptide* does offer fun with friends, though it's the kind for which the mechanics can only take partial credit. Alone, it's pure monotony, and as either sequel or mere continuation it represents a thoroughly wasted chance to push *Dead Island* forward.



RIGHT As in *Dead Island*, melee weapons rule the first half of the game. Fight your way through a series of tunnels to the island's city section, however, and you'll soon be drowning in guns and ammo



ABOVE Defence missions involve fences, mines and mounted gun turrets. However, they mostly involve being cross at NPCs for not having the common sense to handle themselves well in a fight



LEFT When they're not being used, *Riptide's* survivors hang around in the nearest Safe Haven with optional assignments. Sadly, there's no option for you to say, "Sure, sounds good. Go do it yourself."

BELOW Zombies routinely play possum, leaping up for a QTE attack when you get close. They're among the least effective jump scares ever, highlighted in advance by the lack of a handy loot icon



Injustice: Gods Among Us

The 2011 *Mortal Kombat* reboot may have come first, but we suspect *Injustice: Gods Among Us* was the game NetherRealm wanted to make all along. The DC Comics licence is certainly a better fit for the studio's template: accessible fighting games with a wealth of singleplayer content, including lengthy story modes. Yet where *Mortal Kombat*'s bloodlust left a bad taste in many mouths, *Injustice*'s cartoonish slapstick aims for the funny bone. And while NetherRealm was previously bound to mechanics that are almost two decades old, here it's freer to experiment. The studio's previous game might not have been a pitch to Warner Bros – its publisher and owner of the DC licence – for *Injustice*, but it was certainly a dress rehearsal.

Even the story lends itself well to a fighting game. Joker's thumb is hovering over a detonator that's set to blow Metropolis sky high when both he and the gang of superheroes that are bearing down on him find themselves sucked into a parallel dimension. In this reality, Superman, driven mad by the deaths of Lois Lane and his son, has taken over the world and rules it with quite the iron fist. Batman leads the insurgency against him, and it was he who lit the interdimensional bat-signal. It's a smart setup for a fighting game that blurs the lines between good and evil, and provides a handy narrative justification for when combatants face their own selves in mirror matches. The pacing is great, and you're rarely more than a couple of minutes away from a fight. And with a well-chosen voice cast drawn from the Justice League cartoon and other DC games and media, plus battle loads hidden in cutscenes and vice versa, it's slickly produced and well worth the four or so hours it will take you to see the credits.

Mechanically, *Injustice* is clearly from the same studio as *Mortal Kombat*. Combo inputs should be done at speed, rather than perfectly timed, and projectiles go through one another instead of cancelling each other out. Yet there are departures from the formula, chief of which is the casting aside of the block button, with players now holding back or down on the stick to guard against high and low attacks respectively. Those uncomfortable with the *Mortal Kombat*-style directional special move inputs can change them to stick rotations in the options menu, too, a welcome nod to players more accustomed to *Street Fighter* controls. Light, medium and heavy attacks are mapped to the face buttons, with the fourth performing a fighter's Trait, their individual hero power, most of which are limited by cooldown timers to prevent overuse. Batman's sees him surrounded by three bats, which can be fired off as projectiles; Superman's increases the damage of his attacks; Flash's slows an opponent down, as if the speedster is moving impossibly fast. They're a smart addition, differentiating the cast in more obvious ways

Publisher Warner Bros
Developer NetherRealm Studios
Format 360, PS3 (version tested), Wii U
Release Out now

The focus on spectacle – and the recognisable cast – makes *Injustice* more accessible than most modern fighting games



than a genre-standard set of special moves and, of course, a logical fit in a game about superheroes.

Fighters' super moves – performed by squeezing both triggers simultaneously – are also consistent with the fiction. Forget *Mortal Kombat*'s torture-porn X-ray attacks. Here, getting caught with a super move means being uppercut into the sky by Superman, or shot point blank in the face with Joker's rocket launcher. Aquaman summons a vast tidal wave, then holds his opponent aloft on the end of his trident for a passing shark to snack on. But spectacle isn't limited to those with a full super meter – tilt the stick away from your opponent and press the heavy attack button at a certain point in a stage and you'll send your foe flying to a different area. It's an idea cribbed from *Dead Or Alive*, but being knocked off a bridge to the ravine below seems like small fry after you see a hero sent flying through walls, ceilings, water towers and helicopters. By the time the dust settles, the character on the receiving end has lost a third of their health.

Players can also make use of the immediate environment, with a flashing button prompt next to each fighter's life bar signalling when such a move is available. You can bounce an opponent off a piece of scenery in the background, rip open a nearby pipe and freeze or burn your foe, and pick up and throw all kinds of ordnance – grenades, barrels, even cars. Some are useful when you're on the defensive, a handily placed car serving as a platform to backflip to safety when trapped in the corner. Like any other fighting game, spacing (maintaining a favourable distance between you and your foe) is key, but now you also have to pay close attention to where you are onscreen, because there's danger everywhere. *Injustice* is about more than stage corners and the acres of space in between.

This welcome focus on spectacle – and the highly recognisable cast – makes *Injustice* more accessible than most modern fighting games, but there's plenty to appeal to seasoned players. The pause menu contains the usual list of special moves, sure, but also every combo, as well as frame data (showing the advantage or disadvantage of an attack hitting, missing or being blocked) for your entire movelist. The Wager system, which lets players bet a percentage of their super meters in a bid to regain up to a third of their health or dole out a hefty chunk of damage, was surely designed for beginners, but serves as a new kind of metagame in competitive play. Fights move along at a cracking pace, and reward offensive play over keeping your enemy at a distance with projectiles. And it's all presented in a playful, over-the-top Saturday morning cartoon sort of way, with fights playing out much as you'd expect a rumble between superheroes would. *Injustice* is a sensitive use of the DC licence, and it's also a fine fighting game in its own right.



ABOVE *Injustice's* story mode is as seamlessly put together as *Mortal Kombat's*. The only time you'll notice loading is if you try to pause too early in a cutscene. Even when you lose, you're seconds away from a retry



TOP Deathstroke can be infuriating, his wealth of options from range making it hard for the flightier characters to get close. Grapplers like Lex Luthor fare even worse.

ABOVE As you'd expect, Superman does much of his best work from the air. He hits frighteningly hard, too, and makes for a tough final boss, though he's not a patch on *Mortal Kombat's* Shao Khan.

RIGHT From this shot you'd think Aquaman was most effective at range, but he's terrifying up close. He's lightning fast, using his trident to scoop an opponent into the air and slam them down behind him



Soul Sacrifice

One lone design choice lets you in on *Soul Sacrifice*'s underpinning philosophy. Whether you complete or fail a mission outside its story quests — and, like *Monster Hunter*, it demands you regularly step away from the narrative — you're taken back to the mission start screen. It's understandable that beaten players should want to mash the X button to try again, but surely successful hunters should be invited to move on? "No," a smirking Keiji Inafune seems to say, "I expect you to grind."

It's a decision that will likely resonate more with Japanese players than the western audience Inafune has talked of courting, even if the game touted by many as a *Monster Hunter* killer offers a more streamlined take on beast-slaying than Capcom's series. It's brisker and more immediate, plunging you headlong into its dark fantasy world from the instant you press Start. You're a caged prisoner, your only companion a sentient grimoire named Librom, with escape impossible until you've amassed experience of spells and monsters by consuming the memories of a previous sorcerer.

The story doesn't so much arc as inexorably spiral downwards, holding fast to its relentlessly grim descent into darkness and depravity. There's humanity, yes, but it's buried within a writhing mass of guilt and viscera. Its lore, too, is detailed and well-written, so it's a pity it's burdened with some of the worst voice acting we've heard in some time. At times, line readings are almost charmingly awful, even as they undercut the bleak narrative, but elsewhere the acting is disappointingly bloodless. Despite his grotesque, fleshy exterior, Librom is a gratingly jovial cellmate, offering none of the biting snark of, say, Liam O'Brien's memorable turn as Grimoire Weiss in Cavia's *Nier*.

Soul Sacrifice shares more similarities with Square's unwanted stepchild than a talking book. Its combat system is a similar halfway house between a fast-paced arena brawler and *Monster Hunter*'s more considered slashing. There's a bewildering array of spells to equip in your six allotted slots, with snaking roots that burrow towards the nearest enemy, speared projectiles and ovoid mortars sitting alongside healing spells, stat buffs and area-of-effect curses. Each comes in a range of elemental varieties to match to enemy weaknesses, but while they're satisfying to wield, there's often little to differentiate them beyond colour palette. As such, there's never the same sense of attachment as with a hard-earned Acrus Lance in *Monster Hunter*.

They're quickly consumed, too, a design choice that forces you to retreat from the fray more often than the need to heal. The idea, presumably, is to encourage players to use their full range of spells, while restoration points become the equivalent of sharpening a dulled blade with whetstones. It feels like an attempt to ape *Monster Hunter*'s combat rhythms, albeit at a faster

Publisher SCE
Developer Comcept, Marvelous AQL,
SCE Japan Studio
Format Vita
Release Out now

The story doesn't so much arc as spiral downwards, holding fast to its relentlessly grim descent into darkness

tempo. It's possible to exhaust a spell entirely through overuse, leaving it out of commission for the current battle, which seems like an unnecessarily harsh step, particularly given the stamina of many of the game's guardians. The only answer, then, is to farm resources to boost the durability of these spells, and there simply isn't enough variety in *Soul Sacrifice*'s menagerie to counter the repetition. A fresh elemental skin may force you to swap your loadout, but hulking slimes of different shades will all waddle, thrash and jump in the same predictable manner. Efficient combatants can at least alleviate some of the grind: destroying cursed body parts, using counters and avoiding injury are just three of many ways for players to earn extra points from encounters, and with them more resources.

Curiously, it's a binary morality system, that most hackneyed of devices, that proves to be Inafune's masterstroke. So often tacked on to offer the illusion of choice, the quandaries here are skilfully woven into the game's mechanics. Upon defeating a beast, you're given the opportunity to save it or sacrifice it, respectively giving you extra life energy or making your spells more powerful. As the benefits of the latter are more immediately apparent, the choice will seriously test the mettle of wannabe paragons, and not least because rescuing too many monsters sees an assassin from the sorcerer's guild sent to punish your benevolence. Sigils carved into your right arm govern your avatar's abilities, and gain potency the more fully you commit to either side, a tacit encouragement to specialise.

Yet as the story gets ever more macabre, you may begin to waver. Not because the plaintive cries of the beasts reverting to their human form will tug at your heartstrings — even dismissing the weak performances, no character is developed enough for you to care — but because your choices are designed to make you suffer. A single hit from a towering foe will take huge chunks from a dark mage's health bar, while more altruistic spellcasters may find that chipping away at a colossal Cyclops is an arduous task. In other words, every choice represents a sacrifice of some sort. Having chosen the darker path in that rare game that guides you towards it, we're reminded of Macbeth's famous line: "I am in blood stepped in so far that, should I wade no more, returning were as tedious as go o'er."

It's a brave game that dares to weaken players in one way as it empowers them in another. Comcept may be wrong in thinking *Monster Hunter* would be better if it was just about hunting monsters, but *Soul Sacrifice* is courageous and thematically bold enough to distinguish itself from the clones that have followed in the wake of Capcom's phenomenon. As with Inafune's recurring criticisms of Japan, however, it proves repetition isn't always the best way to make a point.





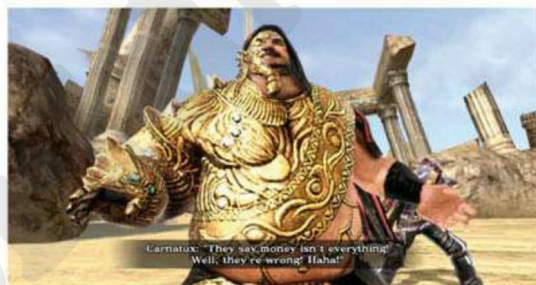
LEFT Certain story chapters won't open up until you've progressed some way through side missions. Meanwhile, saving or sacrificing bosses blocks access to certain quests and unlocks others. You can rewrite history, though: return to rescue an enemy you murdered and the corresponding story branch becomes available for selection.

BELOW The game may not run at Vita's native resolution, but there's an eerie beauty to *Soul Sacrifice*'s environments. Less so the enemies, which range from gruesome takes on familiar fantasy beasts to horribly mutated animals. Cats no longer resemble household pets, instead calling to mind the toxic waste scene in *RoboCop*.

BOTTOM Loyalty to allies is rewarded with a boost to their offensive capabilities over time, though you'll need to be mindful of their alignment. Those who've crossed over to the dark side may opt to sacrifice you rather than save you if you fall in battle



RIGHT Each mission has a difficulty rating, which isn't always a reliable indicator of the challenge therein: you might grind through some four-star missions to gain levels to beat a tough two-star monster, while a five-star mission can see you emerge unscathed within minutes



Star Trek: The Video Game

You can't hurt Spock's feelings, which is handy because his nonhuman eccentricities — pointy ears, machine-like thought processes, monotone speech pattern — are easy targets for jokes. Any time *Star Trek: The Video Game* needs to break an awkward silence with dialogue, you can bet there's a cringe-inducing Spock jab coming your way.

But if Spock is somehow less than convincing in his humanity, it's fascinating and unintentionally hilarious to observe what passes for authenticity in the case of *Star Trek's* Kirk, a veritable circus clown of glitchy unpredictability. A cutscene will end, say, and Kirk will go sprinting full pelt out of the room. Curious to investigate the dire threat our partner has presumably uncovered, we trail him out into one of the Enterprise's hallways to find him standing in a random doorway with his nose inches from the closed door. This Kirk is like an excitable but dim-witted chihuahua.

Occasionally, he even seems to have mutant powers. A few minutes into the game, we board a turbolift — *Star Trek's* equivalent of *Mass Effect's* load-disguising elevators — and, after a brief wait, Kirk catches up to us and boards as well. But seconds after the doors close for our departure, Kirk goes bounding through the walls of the capsule. Then a second later, as if by teleportation, he snaps back into the lift, with no explanation offered for his sudden excursion. Spock lets it go.

Star Trek has more bugs crawling on it than a Fear Factor contestant. Sometimes the results are amusing, as in the turbolift example, but frequently they just make life a drag. On numerous occasions we had to manually reset to the most recent checkpoint and replay several minutes of the game just because some dialogue event or cutscene refused to trigger, leaving us stuck at an impasse. The final enemy in one stage became inexplicably immortal and none of our shots would register. We tried to let him kill us, but Kirk insisted on reviving us each time we went down, so again we had to implement the soft checkpoint reset.

Even when the game is functioning as intended, it's a bland, joyless affair, timidly going where hordes of mediocre games have gone before. There is a mission where you have to bring three power cores back online. There are zombie-like infected humans, which you're encouraged to stun, not kill. You'll encounter stealth sections, during which you'll knowingly blow your cover just to complete the challenge more quickly. There's also a liberal dose of that action-game sequence where your character soars through the air and you must steer around floating debris. There are *Uncharted*-style climbing sections, just because.

Considering the USS Enterprise is primarily a vessel of exploration, a *Star Trek* game has an obligation to surprise players and show them something new, either visually or mechanically. This one has no sense of

Publisher Paramount Pictures, Namco
Bandai Games
Developer Digital Extremes
Format 360 (version tested), PS3
Release Out now

What the game borrows from *Dead Space* is its door-opening power cells, not its interest in environmental storytelling

daring, adventure or risk. The humorous sort of glitches are welcome precisely because they're the only time the game surprises you, such as the moment when Spock and Kirk overlap onscreen and the camera dips inside your character's head, allowing you to see his eyeballs, tongue and teeth hovering grotesquely in midair.

One of the selling points on the box trumpets the fact that you can interact with the ship's crew. After you attempt this, you'll realise there's nothing meaningful to be gleaned from doing so and stop bothering. Don't expect to pepper Chekov with questions about his personal life. The crew simply coughs up status updates, and hardly the Facebook sort. Even the potential thrill for diehard *Star Trek* fans of holding an all-access pass to the Enterprise is undermined by the fact that there's nothing interesting to discover when you do try to scope the place out. What the game chooses to borrow from *Dead Space* is its door-opening power cells, not its interest in environmental storytelling.

Normally developers will insert little jokes into the names of achievements, but when an achievement with the text "Beat Space Battle" blinks up after you beat the stage with the space battle, it sounds more like a cry for help. You can imagine the responsible party having written it just after deleting a draft that read "Bored Out Of Skull. When's Lunch?"

The main enemy this time is the Gorn, a lizard race that feels more like a lift from Jurassic Park than *Gears Of War*. Unlike Jurassic Park, however, these girls are only clever in cutscenes, never in combat. They're savvy enough to hijack a doomsday device and kidnap Kirk's crush du jour, a she-vulcan named T'Mar, but they are total cannon fodder on the battlefield. The imperative of hosting a variety of enemy types is absent here, making *Star Trek* feel more like a carnival duck-shooting gallery than anything. You don't have to strategise: the game assumes you're happy to simply mash the trigger and watch things tumble to the ground.

Star Trek feels like what a publisher could expect to get if they tried to procure a game from a vending machine by feeding a hand-scribbled laundry list of marketing bullet points and 'recommended if you like Game X' notations into the paper currency slot. You get a whiff of *Mass Effect*, only no choice or roleplay. A bit of *Dead Space* without the incredible sense of place. A narrow sliver of *Uncharted* without the snappy Amy Hennig dialogue and the visual polish. A bit of *Halo* without the dizzyingly diverse arsenal.

The only distinctive selling point of this game — the promise of an epic buddy co-op experience between two famous sci-fi pals — succumbs to awkward banter and gimmicky co-op puzzles. *Star Trek* asks you to traverse a vast galaxy, but when the credits roll, you'll wonder why you bothered when there was so little to discover along the way.





ABOVE While the game carves out a bit of space in which to pilot the Enterprise, the iconic ship mostly serves as a stylish means of getting from A to B, bobbing its way through trouble in cutscenes as the player looks on

TOP The majority of the game takes place in interior spaces, such as caves, the Enterprise and space stations, but the most visually inspiring moments arrive when the action takes a step outside.

ABOVE The Gorn, a reptilian menace that first appeared in the original Star Trek television series, returns for another chance to snack on Kirk and the rest of the Enterprise crew. It's hard to shake the feeling that you're shooting velociraptors and not aliens at all.

RIGHT The game's Captain Kirk bumbles around the Enterprise doing his level best to compensate for a suspiciously incompetent command of the ship with bravado, looking for all the world as if it's his first day on the job



Don't Starve

Since science is a cornerstone of *Don't Starve*, it seems appropriate that it's an experiment for Canadian indie Klei. It's the first of its games that's been shaped by a public beta, with an impassioned community helping steer development. And while Klei's previous works have been puzzlers and side-scrolling action games, *Don't Starve* is a game of survival in an isometric otherworldly wilderness with a touch of the infernal about it.

When we say survival, however, we don't mean that in the sense videogames normally do. Lara Croft's most recent outing trotted out the theme, for instance, but mostly as an excuse for some wince-worthy cutscene batterings and a reason to skewer a thousand cultists' faces with arrows. *Don't Starve* is more like what you'd expect if you packed *Minecraft*'s penchant for crafting and exploration off to the Bear Grylls school of wilderness taming.

Dropped in the middle of nowhere with no obvious goal bar staying alive, you'll soon discover that you have three meters to manage: your hunger, sanity and health. It's daytime, but night is coming soon, and you won't make it to day two without a fire. Dark creatures roam these gnarled woods and treacherous swamps, creatures best avoided until you can get together the tools of civilised man. Wandering about the randomly generated landscape, you'll pluck berries from bushes and seeds from the ground with a click, filling slots on an inventory bar. You'll strip saplings for sticks and find flints to craft an axe, then chop trees for firewood. Using the simple crafting menu, you'll plop down a fire as darkness draws in and wait out the night.

Morning comes, and with it choices. You've got to prepare for the next evening, sure, but now you've got the latitude to mine rocks to make a permanent fire pit, say. Soon, you'll also want to make a science machine, which opens up a whole world of useful equipment in your drive for self sufficiency.

There's a lot to experiment with, and it's best discovered for yourself, since that's the main reward for playing *Don't Starve*. The game certainly won't spoil anything for you, and indulges in next to no handholding. In practice, that means it's up to you to work out if it's a good idea to scoff spider meat or take on some of the local fauna in your new grass romper suit. It's a liberating level of freedom, but some of the methods to get your hands on certain resources are obscure, and the results of many actions unpredictable. You'll need to figure them out through trial and error (read: court death), or pore through the wilds of a wiki page. But the logic here is knotty at times. Why do fires not produce ash, while burning plants does? How come you can build houses for others, but not live in them yourself?

Publisher Klei Entertainment
Developer In-house
Format Browser, PC
Release Out now

It's a world full of choice, and the game is not above harshly punishing the wrong ones. In fact, it seems to delight in it



It's a world full of choice, and the game is not above harshly punishing wrong decisions. In fact, it seems to delight in it. Death is swift and permanent unless you've made or found a resurrection item, booting you back to the very first day (or out of adventure mode if you've found the way in). Sadism works in the context of this Dantean hinterland, but while some will see this as a spur, it curbed our enthusiasm to start all over again. Especially since the only things you take away from each hours-long attempt are a little more knowledge and XP with which to unlock new unfortunates to play as.

More damning is that the point soon arrives at which *Don't Starve* leaves us hungry for more. Not content — there's plenty of that, and more to follow — but more satisfying solutions to the problems of survival. With little scope for automation of basic collection tasks, days soon descend into flurries of busywork. You'll click, click, click away at all and sundry, gathering more materials to build an ever-better base of stuff. You'll click, click, click to cook more filling foods, just to keep topping up that insatiable virtual stomach. You'll click, click, click to defend your base from nightmarish monsters. You might endure in *Don't Starve*, but you rarely prevail.

Redemption comes through nuggets of emergent behaviour between species, as well as the genuine shocks Klei has laid in wait for dogged explorers. The atmosphere is rich, and the hand-scribbled Victorian Gothic aesthetic is wondrous. The soundscape deserves special mention, being full of tootling horns and faintly sinister noises.

But despite a world rich in character and initial wow factor, when you do finally hit the point of sustainability, it feels hollow. It doesn't take long to realise why humans pursued the path to civilisation: merely surviving is mundane. *Don't Starve*'s set of pre-made items doesn't offer the room for self expression of a game like *Minecraft*, either, so what to do once you've found your place in its land? Klei's limp answer is to simply change the rules a little and ask you to survive some more.

If you persist long enough, you'll discover there is a mystery here to solve. But the process of unravelling it is long, punitive and indistinct. More importantly, it's no respecter of your time, requiring a number of base restarts in new circumstances. Since the early game is the least interesting part of the process, it's difficult not to resent this.

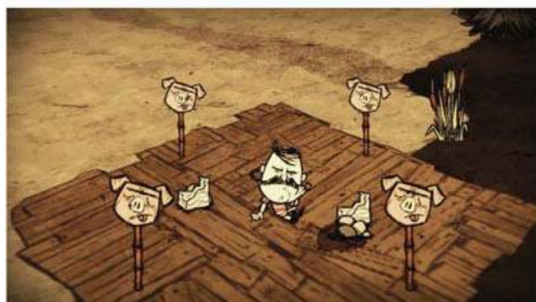
Don't Starve is by no means a bad trial run for Klei's new way of working, but it's a pursuit for those with a wealth of patience and an appetite for pain. Klei may have modelled Hell brilliantly, but that doesn't mean we want to live there.



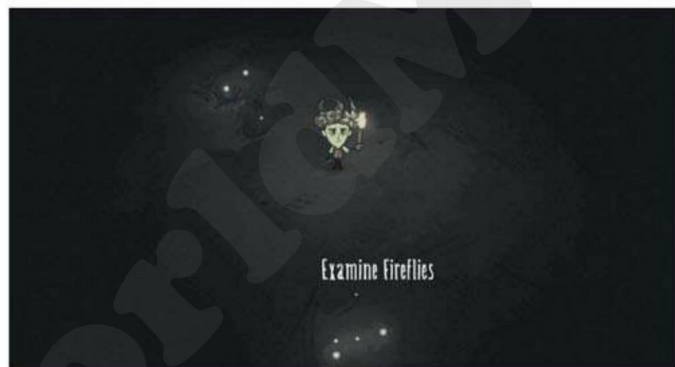
ABOVE We normally celebrate permadeath as a mechanic, but *Don't Starve* is too long a grind and offers you too little in return for your time to make it seem worthwhile here. That said, knowing you'll lose everything if you do fall is an incentive to treat this wilderness with real caution.

LEFT Start losing your grip on reality and the screen begins to wobble sickeningly as evil shadows flit around you. Eventually, they'll start attacking, although this may work out in your favour if you know what you're doing

BELOW Klei wants to give you reason to be afraid of the dark, which means killing you swiftly if you let the lights go out. But you will find ways to leave a circle of firelight in greater safety later on



ABOVE Touchstones, if found, offer you a second chance after death. Like many of the things you come across here, though, they tap into concepts based on dark magic, a definite counterpoint to your scientific endeavours



BattleBlock Theater

Four years it's taken The Behemoth to make *BattleBlock Theater* – that's nearly a *Fez*-length gestation. But the studio behind *Alien Hominid* and early XBLA poster child *Castle Crashers* has used its time well, delivering an ambitious cocktail of ideas and genres that initially feels disjointed but soon coheres into one of the service's finest moments.

The spine of *BattleBlock* is a slick, well-paced platformer, which tells the story of a group of puppet friends who, when their boat runs aground, find themselves the victims of sadistic theatre-loving cats. The objective of each level is simple: collect at least three diamonds to open the exit. Balls of yarn also await in particularly precarious areas, and are used to bribe corrupt guards to get new oddball ordnance. Those diamonds, meanwhile, will liberate your fellow captives, unlocking cosmetic avatar options in the process.

Each act contains nine levels, a finale against the clock and three 'encore' levels. The platforming never achieves *Super Meat Boy*'s flow and grace, but it only falls short of Live's standard bearer by a cat's whisker. Inertia is expertly judged and stringing together a chain of wall slides, double jumps and death-defying leaps to best perilous traps is as moreish as it is hectic.

The screen is a riot of activity, and there's rarely a moment when something isn't exploding or trying to kill you. This is offset by a gentle puzzle-solving element that stashes bonus gems away from the main path

Publisher The Behemoth
Developer In-house
Format 360
Release Out now



BETA BLOCKS

BattleBlock Theater also draws comparisons to *LittleBigPlanet* with its level editor. While its possibilities are more limited, it's a far less daunting tool. Simply choose your level's dimensions, then place blocks and enemies drawn from a menu opened with the R trigger; themes, colours and backgrounds are accessed through the L trigger. It's thoroughly welcoming and a clutch of sharing options, including community playlists, should ensure a long lifespan.

In co-op, *BattleBlock*'s levels transform from memorable to essential. Puzzles metamorphose into new forms to test teamwork, with you able to throw, grab or simply stand on the shoulders of your partner to progress. The clever use of switches, more challenging tiles and ravenous enemies recalls *LittleBigPlanet*'s best co-op puzzles, albeit delivered at a more breathless pace. With a partner in tow, it's easier to forgive the occasionally misjudged jump distances and awkward melee combat, which always seems to devolve into a war of attrition, breaking the otherwise-impeccable rhythm.

This tangle trips up *BattleBlock*'s suite of versus and team multiplayer modes, too, because the fighting simply isn't enjoyable enough to support a straight-up deathmatch. However, the modes where you paint wall blocks in your team's colour or collect money from a golden whale to deposit in a floating safe fare better.

The Behemoth's lunatic sense of humour is let off the leash entirely in *BattleBlock Theater*. Its barmy story is delivered by a genuinely funny narrator (who chides you cheerfully in-game, too), while enemy designs include such oddities as dual slices of toast that work together to sandwich you. Bright, colourful and mostly dismissive of current trends, it's clear The Behemoth wants to delight players with every moment of its latest performance. That it succeeds in only most of those moments is still a remarkable achievement.

8



Badland

Publisher Frogmind
Developer In-house
Format iOS
Release Out now

Founded by former members of *Trials Evolution* developer RedLynx, Frogmind wants to create mobile games with production values that rival large studios' efforts. And, aesthetically at least, its two-man team has fired a convincing opening salvo with *Badland*.

The strikingly beautiful silhouettes, graphic-novel-style backdrops, and crisp, pared-down audio evoke *Limbo*'s sense of isolation and macabre discovery, and there's even a little *Oddworld* in here. But it's mechanically closer to *Jetpack Joyride*, despite being segmented into levels.

You must guide a charmingly drawn bat-like creature to the exit, holding your finger on the screen to make it rise and letting go to fall. Along the way, various power-ups will change its size, velocity, material properties or even create clones. In combination, these powers allow you to negotiate traps and solve 'puzzles,' though this is something of a misnomer, given that power-ups are placed exactly where you need them.

Frogmind's previous involvement with *Trials* sets high expectations for player control, but your character's lurching movement makes progress feel laboured here, especially when trying to negotiate tight tunnels. Though specifically told not to do so, you'll end up tapping the screen in an attempt to gain finer control and still continually bump into scenery. It's a great shame, because with tighter controls Frogmind's charismatic debut would be a memorable one, but as it is it lacks the power to draw you back into its world. **6**



Solitaire Blitz

Publisher PopCap
Developer In-house
Format iOS
Release Out now

PopCap's latest digital narcotic is a particularly potent concoction, taking a game on which we've all idly wasted quiet working hours and building on it with an adorable aquatic theme and a ticking clock to make it extra moreish. Be prepared to spend, however, if you don't want the hit to wear off quickly.

Suits don't matter in this variant: any card that's one higher or lower than the face-up card on the build pile can be placed as you try to clear seven stacks. Cards with key icons unlock more build piles, and with your score dependent on how long you maintain a streak, you can kiss goodbye to a high total if they're buried deep in the stack.

This is where purchasable boosts come in. Explosive barrels blast cards onto the build pile without breaking the combo, while a starfish makes six quick moves – handy given the distraction of your wriggling bait as the timer nears zero. Yet the in-game silver rewards for the treasures fished out from under each completed stack are piffling compared to the cost of these assists. It isn't quite pay to win (our high score came from a fortuitous no-boost run), but spending gives you a better chance of scoring well.

Quick minds and fingers will be rewarded with larger time bonuses, but luck ultimately triumphs over skill. Yet with a poor run so often coinciding with your energy meter running dry, it seems there are darker forces in play than mere fortune. How fitting that the virtue you need most to enjoy *Solitaire Blitz* without paying is patience. **6**



Zombie Road Trip

Publisher Noodlecake Studios
Developer Spokko
Format iOS
Release Out now

This is the perfect storm: the tricks of *Joe Danger*, infinite running style of *Tiny Wings*, with dopamine-rousing lotteries and, of course, zombies. You direct your auto-accelerating car along an undulating 2D course, pulling tricks in return for boost, shooting zombies for currency, and surviving for as long as you can before the horde catches up.

Zombie Road Trip features plenty of F2P craftiness, too. There's a viral virulence in rewarding you with currency for issuing highscore challenges to your Game Center friends. In the pricing of gadgets, weapons and vehicles (and their upgrades), the drip feed of currency grabs and pulls you along. It's balanced to feel like you're progressing through skill, even if you'll have to grind hard for the best – incredibly expensive – items, which are but an IAP away.

Granted, Spokko also boasts pure game-making talent. The floaty inertia of your car is impeccably tuned, achieving perfect landings by touching all wheels down at once is always satisfying, and the sound effects are just right. And game over always comes as a result of you making mistakes.

But it's ultimately empty. The more you spend, the greater the distance bonus you receive. At level nine, your score's 2.6 times your distance, making the main leaderboard a matter of perseverance and commerce. Like many similar games, *Zombie Road Trip* makes you question why you've sunk hours into it, but you'll grudgingly admit to enjoying the ride. **6**



create

Lifting the lid on the art, science and business of making games

This issue's **People, Places, Things** gets underway on p118, where we pin down *The Last Of Us* co-director and polymath Neil Druckmann  to talk about what it takes to be effective in high-end development and why taking acting classes was a brilliant career move. Rekindling an old flame on p120 is our look at the evolution of fire worlds , from simple lava palette swaps to destructive set-piece levels. Then it's time to head out to the wilds of Pandora to meet Claptrap  on p122, the low-rent R2-D2 who imbues Gearbox's *Borderlands* series with a cheery brand of malice. Meanwhile, Klei Entertainment, home of *Mark Of The Ninja* , is the focus of our **Studio Profile** on p124, and we discover how that game in particular has brought about a new era of quality at the studio. **The Making Of...** on p128 peddles *Cart Life* , Richard Hofmeier's monochrome three-time 2013 IGF winner. And **The Art Of...** on p132 whisks us away to Zenozoik, as we talk to *Zeno Clash*  creator ACE Team about its firstperson brawler. As ever, our columnists have the final say, with designer **Tadhg Kelly**  (p136) explaining why games are a poor medium for telling stories in a filmic sense and **Clint Hocking**  (p138) bringing to life a debate about gaming's reliance on killing and death, even in nonviolent titles. Tiger Style's **Randy Smith**  (p140) reflects on finding success as an indie, while **James Leach**  (p142) has something to say about the importance of listening less and contributing more during the early stages of a videogame project.



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analysis and reviews



Fire Flowers have been a component of Mario's games since the 1980s, but so have fire worlds, which can throw some nasty surprises at even a well-armed plumber. We track their evolution on p120

CREATE
PEOPLE, PLACES, THINGS

People

NEIL DRUCKMANN

Meet Naughty Dog's Renaissance man



From criminology to programming and then writing and directing, Druckmann has packed a lot into his life. This in turn helps him pack a lot into Naughty Dog's games

With both its cinematic *Uncharted* trilogy and post-civilisation drama *The Last Of Us*, Naughty Dog has been attempting to make something more than games with big stories and characters. Its stated aim is to tell stories and paint vivid characters through gameplay. As a result, the studio has evolved a new approach to game development, a sophisticated collision of traditional design and mechanics with storycraft and performance capture. And this in turn has generated a new kind of highly skilled and multifaceted developer.

Neil Druckmann has been with the company for eight years, and is one such developer. As the creative director on *The Last Of Us*, he shares overall responsibility for the title with game director Bruce Straley. Together they make a balanced pair. If Straley is the more talkative and technical of the two, then Druckmann is the more guarded and philosophical, dealing with the intangibles of performance and meaning.

The two directors are the bridging point between the studio's traditional development side of coders, artists and designers, and the relatively new performance capture branch. The latter occupies a sound stage on the Sony Pictures lot and sends dialogue, movement and scenes back to the studio in Santa Monica as a digital river of data. Of course, in practice the divide isn't that tidy – and as Druckmann points out, nor should it be, since the aim is to unify these strands rather than keep them apart.

"There's a ton of overlap between us, because story spills so much into the gameplay, whether it's how the characters speak or the tone you get from the level," he says. "And likewise the stuff

gameplay is putting together [and] art is putting together has to gel with the motivation of the characters. So we're constantly communicating and critiquing each other's work, and looking over each other's shoulders to make sure everything is working in concert."

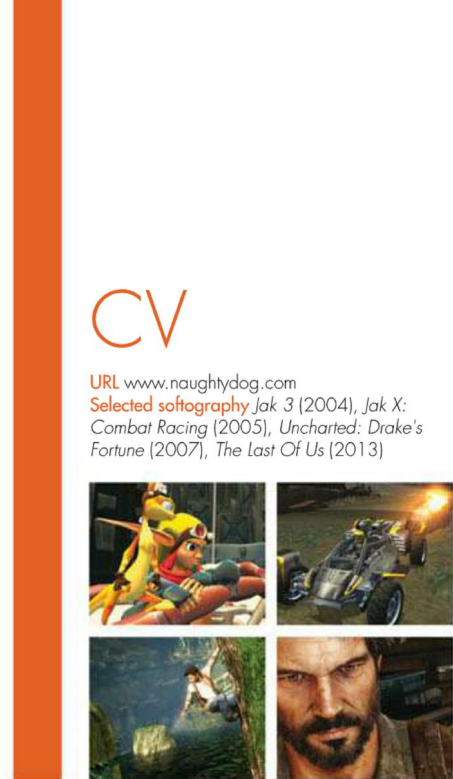
Helping Druckmann to work across disciplines is a background in programming. Originally starting out as a criminology major ("I thought I was going to be an FBI agent, that's how silly I was"), he tried a programming course and found that it came easily to him. Having played games from a young age ("I worried my parents with that"), he then had an epiphany: "People make games. There's got to be jobs out there to do

that." So he set out to find one, switching majors, enrolling for the Entertainment Technology masters at Carnegie Mellon, and hassling Naughty Dog co-president Evan Wells for an internship. He got one – against the studio's regular policy – and was subsequently a programmer on *Jak 3* and *Jak X: Combat Racing* before moving to the design team for the first *Uncharted*.

This design work has taken Druckmann a long way from coding, with duties that now include scriptwriting and directing actors. Even in today's development landscape these remain unusual specialities, having grown out of Naughty Dog's pursuit of more sophisticated, more integrated storytelling. Druckmann had no specific history or training to aid his scriptwriting, but as he explains: "I'm lucky in that I started my career at Naughty Dog, which has always been very story driven, very character driven." He pays tribute to the studio's serious approach to storytelling, too, describing ongoing internal discussions and explaining how the team takes advantage of its location to attend seminars run by Hollywood talent such as Pixar and JJ Abrams. "We're constantly trying to refine our craft, trying to think of ways of using less exposition, making it more character driven, [and] thinking about arcs."

If writing came naturally to Druckmann, directing was a different matter. He helped select the leads for *The Last Of Us*: Troy Baker, a successful voice actor recently heard in *Bioshock Infinite* and *God Of War: Ascension*, and Ashley Johnson, who's appeared regularly in films and on television for more than a decade. When it came to working with them, Druckmann signed up to acting classes, showing that same seriousness and enthusiasm to learn with which he credits Naughty Dog as a whole.

"It was a totally scary and horrifying for me to do, because I'm introverted and shy," he says. "But I felt it was a necessary experience, just so I could talk to them in the same language." Straying far away from the certainties of programming, Druckmann discovered the importance of communicating with his actors, especially in the prop-less, costume-less space of the motion capture stage. "Showing them concept art, really having them understand, 'Here's the situation you're in, here's what's just happened to your character.'" And, though it sounds like an easy cliché, he also discovered the importance of trust. "A lot of times, people laugh when someone says



URL www.naughtydog.com

Selected softography *Jak 3* (2004), *Jak X: Combat Racing* (2005), *Uncharted: Drake's Fortune* (2007), *The Last Of Us* (2013)

an actor did something brave. [But] there's a ton of people in that room watching you, and you have to really expose a personal side of yourself, especially if the scene deals with a very difficult decision or a difficult choice. As a director, you have to put yourself on the line for them, and say, 'Here's why this is personal to me; here's where I'm putting myself on the line, on the page.' The more they see you become vulnerable, the more they're willing to do it themselves."

To date, Druckmann's career at Naughty Dog has taken him from programmer to designer to writer and director. The diversity of his path is a sign of the growing complexity of big-budget gaming, but also, more specifically, of the ambition within Naughty Dog to combine creative disciplines in its work. In this context, Druckmann agrees his past is an asset. "My programming background certainly helps me when I think of the more dynamic parts of the story, or where the story fits with gameplay. It helps me make that shift in my mind that someone with just a writing background, or just a writing background in TV or film, would have a harder time doing."

In fact, he goes even further than that, agreeing that polymathic capabilities are a condition of entry when it comes to overseeing the development of sophisticated high-level games. "You have to constantly talk to all these different departments, and on a very basic level you have to understand what they do. If I'm talking to lighting artists, I better have some understanding of key lights, or brim lights, or fill lights. If I'm talking to an animator, I better have some understanding of anticipation [and] follow through. Otherwise, how can I adequately critique their work in any sort of meaningful way other than to say 'I don't like it' or 'I do like it'?" ■

CREATE
PEOPLE, PLACES, THINGS

Places

FIRE LEVELS

From hot stuff to pure Hell, we explore one of gaming's burning passions



You can count on Mario to visit a fire world. Both *Mario Galaxies* sought to reinvigorate the cliché by blending it with another, resulting in the fire-and-ice themed Freezeblame and Shiverburn Galaxies

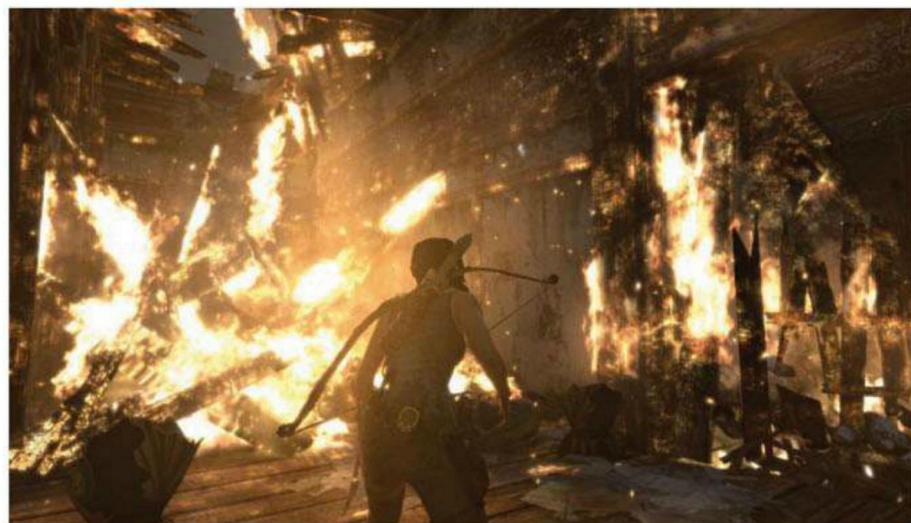
Fire levels are hard, and that's the whole point. Mario might have bounded his way through the invitingly weird opening levels of the Mushroom Kingdom in *Super Mario Bros* in 1985, but it was time to slow down when he reached World 1-4. The first of Bowser's castles didn't just have pools of instant-kill lava in the gaps between platforms (it was palette-swapped water, but that was of little comfort if you fell in), it also introduced a new obstacle: the fire rod.

These rotating propellers of flame would become a platform game staple, though they'd transform along the way, morphing into lasers or geysers of acid in line with the surrounding fiction – even *Mario* games would eventually prefer to dress them as spiked balls on chains. Back in World 1-4, however, they represented a new kind of threat. A few lazily spinning fire rods in an otherwise empty corridor provided a fresh challenge, one based on cautiously waiting and watching for an opening to arrive. What's worse, they mischievously turned the tables on you. For three levels, Fire Flowers had been Mario's secret weapon, but now he had to carefully jump his way through burning poles made of the same fireball sprite that in previous levels he'd flung triumphantly from his palm.

In the designer's toolbox, fire levels offer a perfect blend of theme and function, especially for platform games. These levels are invariably tough, designed to test the skills that previous levels have honed, with wreaths of flame and pools of magma providing a means of rendering redundant space lethal. Floors are swapped for rivers of lava, from which fireballs can leap, crisscrossing the gaps between platforms. And even that on which you stand might overheat or catch flame. *Super Mario 64's* Lethal Lava Land proved the notion worked just as well in three dimensions as in two, with fireballs infuriatingly dancing across platforms and the thick, magmatic soup that spans the entire level rising and falling over partially submerged platforms like a tide.

It didn't have to be fire, of course. The difference between a bottomless pit and one of deadly molten rock is, from a design perspective, next to no difference at all. The sludge in Lethal Lava Land shows how fire worlds can be marginally more forgiving, though: Mario bounces right off it in semi-controllable agony, clutching his rear in pain. There's an inherent drama to fire levels, too. They took the abstract threats that

All that fire-and-brimstone imagery can't help but conjure associations with notions of Hell



Lara's push through a burning temple mirrors Nathan Drake's château escape, one of *Tomb Raider's* many debts to *Uncharted*

designers of games such as *Mario*, *Mega Man* and *Sonic* wanted to provide and then clothed them appropriately: we all know, conditioned by childhood warnings, not to touch flames.

There's another reason fire levels resonate as the ultimate gauntlets: all that fire-and-brimstone imagery can't help but conjure associations with Judeo-Christian notions of Hell. *Spelunky* makes the metaphor literal in its most secret of secret stages, and the Hell stage is in many ways a classic fire level, stuffed with lava pools and populated with fire-themed bad guys. It even features the descendants of the fire rod: slowly rotating spiked balls on chains. But fully embracing the Hell theme lets *Spelunky* take it a step further, and a vicious preponderance of spiked pits and traps means you'll exit Hell a little more God-fearing than before.

Minecraft, meanwhile, dares players to explore the Nether, itself at one point called Hell. This fiery otherworld swaps the blue and green of *Minecraft's* blocky surface for endless darkness and molten seas. It's treacherous terrain, filled with items impossible to find elsewhere but dangerous to search for – the shadows of the Nether concealing abrupt drops and hidden magma pools. You can't place water here – empty a bucket and it'll turn to steam – and any trees you plant will take on a dead, dreary appearance. But, temptingly, any distance you travel in the Nether is multiplied by eight when you transport

back into the overworld. Mojang's open-ended world builder can't offer traditional difficulty spikes to impede progression, but it can still use its own take on the fire level to offer a well-balanced risk and reward decision.

As the popularity of platform games has waned, the link between fire and difficulty has faded, and so has the idea of a fire world as a discrete place within a game. No other genre is quite as suited to the navigation gauntlets that flame and lava can provide, so what's left are places like *The Elder Scrolls'* fiery planes of Oblivion, which are rife with Hellish imagery, but aside from a few pools of red-hot liquid, simply offer standard dungeon-raiding for the series.

But gaming's march towards realism has brought with it a new kind of fire level, one that fully embraces fire's natural tendency to destroy. The set-piece infernos of games such as *Uncharted 3*, *Tomb Raider*, *Max Payne 3* and *Far Cry 3* serve a different purpose to *Mario's* fire levels: they're chase scenes, the ultimate scripted thrill in already heavily choreographed campaigns. After all, nothing quite says "No, no, run over *there*" like a towering wall of flame.

These places aren't hellish otherworlds or abstract lava lands. They're office blocks, decrepit hotels, châteaux and temples: ordinary locations in naturalistic games, and places that you'll usually have just finished exploring before the temperature starts to rise. Once designers built worlds around the idea of fire, but now they take their artfully fashioned sets and put them to the flame. ■

CREATE
PEOPLE, PLACES, THINGS

Things

CLAPTRAP

The irritating yet endearing companion at the heart of Borderlands



For all his dancing, his annoying dubstep and his tendency to boss the player around, there's no denying that Pandora would be a much lonelier place without Claptrap

From *Borderlands* series
Developer Gearbox Software
Origin US
Debut 2009

Both *Borderlands* and *Borderlands 2* feature gas-masked bandits on their covers, but the robot sidekick and lovable jerk Claptrap has become the real face of Gearbox's RPG-shooter series. The ubiquitous bandits generally serve as moving targets that yell one-liners, and the player's avatar is little more than a name and a colour palette. Claptrap, on the other hand, works overtime as a tutorial guide, a quest giver, a quest objective, a checkpoint steward, narrative glue, an emotional link and the mouthpiece for a jolly brand of malice. "Interesting fact!" he chirpily volunteers in *Borderlands*. "Based on your current stress patterns, I calculate a 94.3 per cent chance that you will encounter an unfortunate death experience."

His mocking patter and hapless delusions of grandeur spring to life as a full personality. While the first game featured many CL4P-TP units, the second shrewdly reduced the population to just the *Fyrestone* original, after Handsome Jack orders the line destroyed. This completed Claptrap's rapid evolution from generic helper to relatable mascot, and from being a useful thing to the essential character we know.

Though it's difficult to imagine *Borderlands* without Claptrap, Gearbox CCO Brian Martel has said in interviews that he began as a lark. Reportedly responding to a minor assignment, concept artist Lorin Wood posted a sketch of a robot that looked like a downmarket R2-D2. Similar in shape to a kitchen waste bin balanced atop a single thick tyre, and with a pair of spindly arms and one bulging eye, it was labelled Zippy. Apparently, Wood was just going for a laugh, but the Gearbox team were the first of many to fall hard for the little guy, instantly seeing how he would fit into its colourful toybox wasteland. Thus Zippy became a line of CL4P-TP General Purpose Robots, manufactured by the Hyperion corporation to maintain Pandora's map crossings and public works. These bots would ultimately spend more time in need of maintenance themselves, however, and would frequently send players off in search of repair kits. To voice the new character, Gearbox president Randy Pitchford tapped vice president **David Eddings**, who had some personal qualities that suited Claptrap's developing persona.

"They wanted to make someone needy, slightly irritating and endearing," Eddings gamely admitted to *Mashable*, "so it was typecasting."

Claptrap works overtime as a tutorial guide, a quest giver, narrative glue, and emotional link



Claptrap sometimes forgets himself and the fact that he's a robot. Strangely enough, this only makes him more endearing

His *Mel Blanc*-inspired screwball turn hits every nail on the head. Claptrap is needy: no sooner has he finished giving you the opening tutorial in *Borderlands 2* than his eye gets stolen by a Bullymong, initiating a joint repair quest hampered by his blindness. He's irritating: he cackles and chides, makes random dubstep noises and tries to distract you with lectures on local rocks when he won't let you enter an off-limits area. He's also endearing, with his disco moves, indiscriminate high fives and gradually disarming postapocalyptic cheer. He can even be all three at once, striking character notes that are funny, sad and sharply observed about the megalomaniac nerd type. The sidequest where you awkwardly wait out his unattended party elicits laughs as well as an emotional bond. It isn't a total failure, after all. You show up.

Behind the friendly faceplate, Claptrap has important functions in the games' design. Now that the interfaces and lore of games are too complicated to absorb through printed manuals alone, designers have to find ways to slowly immerse players in their rulesets. Those dissatisfied with story-breaking popup windows must also determine how the guidance fits into the fiction. The gold standard is *Fallout 3*, where a cradle-to-adulthood flashback situates the acquisition of menus and basic abilities in a logical narrative, avoiding the scenario where an adult gets instruction on how to walk and look. In

Borderlands 2, Claptrap throws a snarky quip over such absurdity: "Your ability to walk short distances without dying will be Handsome Jack's downfall!" he teases, teaching you how to move the left stick. But he also gives you your ECHO device, creating a solid in-game context for the floating metadata we take for granted. He makes manifest the almost airtight, but slightly cracked logic that enlivens the world of *Borderlands*, which seems to good-humouredly roll its eyes at the same videogame conventions it executes so well.

Claptrap sort of knows he's a robot and sort of doesn't, which is emblematic of the games' deft balance of hermetic fantasy and open parody. "Take a deep breath," he says to calm himself. Then he remembers: "I can't breathe! This is just a recording of someone breathing! It's just making me more nervous!" He constantly rattles the fourth wall without breaking it, instead saving that for the promotional videos in which he stars as a finicky diva terrorising his designers. The common bossiness of helper NPCs is redeemed as a satirical yet authentic personality trait. The satire isn't limited to the internal world of the game, either. Among Claptrap's dying words are, "I see three flashing red lights," a deliciously deniable reference to 360's red rings of death.

If the fun of *Borderlands* comes from its huge selection of weapons, sprawling world and rousing battles, Claptrap personifies the self-mocking soul that raises it above a crowded field. Gearbox's winning formula is to take gameplay very seriously, but not games themselves. ■

STUDIO PROFILE

Klei Entertainment

How *Mark Of The Ninja* snuck this small Vancouver indie away from the point of starvation and towards a higher standard of game design



- 1 Krampus is dead, despite Klei's affection for him, because *Don't Starve* beta players disliked having their items taken.
- 2 *N+* was the result of a joint project with Metanet Software, among others, to bring brutal webgame platformer *N* to XBLA.
- 3 *Eets Munchies* is a madcap puzzle game based on finding cake for the cute little Eets.
- 4 *Shank* was the game that started it all for Klei, telling a Tarantino-esque tale of revenge via slick animation and gore.
- 5 A sequel to 2010's *Shank* followed in early 2012 to mixed reviews.
- 6 *Mark Of The Ninja* is Klei's breakout game, and a Criterion Collection-like special edition is due soon

Nels Anderson is staying in a bed and breakfast on the Isle of Skye, and checking the reviews for a just-released game called *Mark Of The Ninja* whenever he can find a Wi-Fi spot on the rural single-track roads. Anderson is the game's lead designer, and he works at 30-person Vancouver developer Klei Entertainment. This is September 2012, and Anderson is about to discover that the game is Klei's biggest hit to date.

Mark Of The Ninja reinterprets the immersive, moody stealth genre as a vividly animated 2D side-scroller, an experiment that makes the uncompromising systems of the genre accessible without making them dull. Anderson has been invited to talk about the design at the 2013 Game Developers Conference in San Francisco, where his game has been nominated for two industry awards. While the studio can't discuss sales numbers, founder **Jamie Cheng** confirms it was a huge success for Klei, so significant that it marks a new beginning for the company. As a result, Anderson is not out of the *Mark Of The Ninja* business quite yet.

Today, in a Vancouver office building that also houses a geological survey company and a worldwide pork packing firm, Anderson is bringing to a close the project that's defined his professional life for the past two years. Though *Mark Of The Ninja* has already been released, he's been hard at work on an upcoming special edition of the game. He's penned 12,000 words of developer commentary and is building a new level from the ground up, a job that seems much harder now he's the team's only full-time designer and working in a compressed timeframe.

"It did seem easier," Anderson reflects on the process. "There's, like, 24 separate things that all need doing. Any one of those could take several weeks to do. [One is] like: make the encounters [between the player and enemies] and make them good. What does that mean?"

There's a higher standard for game design at Klei since the success of *Mark Of The Ninja*, too. "We can't accept anything less any more," says Cheng. "It's raised the bar of what we can do." Before, Klei was best known for its two *Shank* games, both action-based brawlers. "I look back on *Shank*," he admits, "and think it's not such a good game." If Cheng is hard on himself, it's because he's deeply idealistic about what his company should be making. Each one, he says,

"We were forced to just build our own stuff and try to sell it, because we couldn't get anything else"



Klei's offices house about 30 staff, including a number of multitasking 'T-people' who can cross design disciplines

should be a deep new experience. "That's the guide we use to make the games. That's what I hope people see when they pick up a game. They see that it's greater than the sum of its parts. It's not just a slick, put-together game." Cheng tells his colleagues that he'd rather Klei closed its doors than make a game it's not proud of.

Before Klei, Cheng was an AI programmer with *Dawn Of War* developer Relic Entertainment. Soon after Relic's 2004 acquisition by THQ, Cheng left to start his own company in the belief that "there is a better way to [do] game development. There is a great, sustainable way to do game development."

Cheng wanted to build a different kind of workplace, though he didn't know then exactly what it would look like. "I said I'd like to build a company where it's not expected that we're always doing overtime and we're always doing crunch. The response I got was, 'Well, good luck with that.'"

Klei was born into a challenging environment. There was little scene or support for indies in Vancouver at the time, and without a robust infrastructure for digital distribution, studios relied on publishers to sell their game. "I actually didn't know where I was going to make my money from," says Cheng. "I had no idea."

In the beginning, he was just trying to survive. Low on savings, he pitched proposals for 'depressing' contract jobs, including making a game based on the Bratz licence. Every pitch was rejected, which he's thankful for in retrospect. "We were forced to just build our own stuff and try to sell it, because we couldn't get anything else."

The experience strengthened Cheng's conviction to have the studio produce original, high-quality work. "I saw around me all the contract job people living on brutal margins, not owning anything, and then dying out when the

market crashed. It was very clear that it was a terrible business idea to do contract work. You don't get the creative fulfilment, your morale is low because you're working on shitty stuff, you can't control quality, which is really important because if you can't control quality, your reputation suffers." If Klei's Bratz proposal had been a success, "maybe we wouldn't be around any more".

Cheng hired Jeff Agala as Klei's creative director in 2007, which "transformed the company". In a team that then consisted mostly of programmers, Agala – a cartoon animation director – established animation and animators as part of the studio's identity. "Because of Jeff, animation, from the very day I started, has been highly valued at Klei," says animator **Aaron Bouthillier**. "We're trying to elevate the art side of things as much as we can."

"[Agala] and I work amazingly well together," says Cheng. "He's slightly technical and I'm slightly artistic. [Those sensibilities have] merged together. Our company ended up being built that way, where the people here are multitasking. We call them T-people." The horizontal bar of the 'T' represents proficiency in a single discipline, while the vertical is an ability to engage with a variety of others. Bouthillier, for example, finds himself contributing more and more to the early development of design and gameplay concepts, and helped craft the story and characters for *Mark Of The Ninja*.

Kevin Forbes joined Klei as a programmer with a background in animation. "I find that you really need to speak two languages," he says. "One of the things I like about working at a smaller company is that you do get exposure to wider areas. I spent a year and a half [in triple-A development] working entirely on baseball defensive fielder AI and animation, and that is a vanishingly small piece of a not particularly meaty game." Whereas on *Don't Starve*, which has a team that numbers in the single digits, "you have to do a little bit of everything".



Founded 2005

Employees 30

Key staff Jamie Cheng (founder), Jeff Agala (creative director)

URL www.klei.com

Selected softography *Eets Munchies*, *N+*, *Shank*, *Mark Of The Ninja*

Current projects *Don't Starve*



Mark Of The Ninja (left) builds on Klei's animation expertise and enhances its stealthy play with the ingenious visual codification of both sound and guard attention. **Don't Starve** (above) is an experiment for Klei with a new perspective and a beta release model. It's reviewed on p112

Klei has no producers, which Cheng says "is only workable if the studio has T-people. If you don't have people who understand other professions, you can't understand how your work is going to affect other people.... You need someone else to see the roadblocks ahead of you. If you do not have T-people, [then] that's a producer's job. Without a producer and with T-people, I find it to be far more effective. The whole team works better. They all know more parts of what's going on."

"There isn't really any hierarchy per se," explains Anderson. "Jamie wears the crown, ultimately. But broadly, there's a lot of trust for everyone to do what they think is in the best service of the games and the studio at large. If someone wants to step up, that's awesome. That's kind of how we approach anything, really. If someone feels really firmly about something, just do it. You don't have the time, or the freedom, to worry about a lot of decision-making overhead in that regard."

"We try to be as egalitarian as possible," Forbes concurs. "I'm not a big fan of the teams where there is the designer who writes something down on paper and then throws it over the fence for some poor sap to evaluate." Forbes, who began work on *Don't Starve* as a programmer, soon ended up in the lead role, and is now responsible for the project roadmap and engagement with players and press. "It kind of just happened, I think... I mean, someone has to do it."

Don't Starve, in which players gather resources to survive each day on a weird island, is an experiment for Klei. Inspired by an important round of internal game tests held for *Mark Of The Ninja*, Cheng asked a small team to build a game that could be self-released in six months as an open beta, and then revised quickly and often in reaction to player feedback. The beta was put out in late 2012, and since then Forbes and his team have released regular content updates,

technical fixes and balance changes in consultation with the community.

It's been an unmitigated win according to Forbes, who cites access to an enthusiastic testing base, increased player investment and an early indicator of commercial viability. "I think it would be hard at this point to go back to... where you build something and no one sees it for a year and a half." Players have connected with the *Don't Starve* beta far beyond Klei's expectations, not only taking to forums to share stories of discovery, but producing fan art and songs.

Beta players have a sense of ownership in the game. "They're helping to shape the process as the game develops. [We] ended up making a very strong core community that helps us, with every update, to evaluate the work that we're doing and to kind of keep us honest as to the game's direction," says Forbes.

Cheng hopes this is another turning point for Klei. "I didn't like that we were releasing games and not engaging with our customers well," he says. For *Don't Starve*, Cheng revived the studio's once-defunct forums and hired a community manager. "I wanted to better support our players and build that relationship with them over time. I thought it was going to take us a few years

to do properly. I'm just as surprised as everyone else that it came so early... We're selling [*Don't Starve*] because people actually want to recommend our game."

Like Anderson, Forbes has been gradually winding his game down as its release date approaches – it will be out by the time you read this – after which he's committed to six months of further content updates with a smaller team. The prospect of an official release doesn't faze Forbes ("I think it'll just be another update, to be honest"), nor do the following six months. "I'm easily bored. The thought of doing a baseball sequel was enough to make me quit my [previous] job. But I'm not sick of *Don't Starve* yet."

In addition to *Don't Starve* and the *Mark Of The Ninja* special edition, Klei has at least two more unannounced projects underway. The ability to develop this number of games at once only became achievable in the past year, when the studio reached a critical staffing level. Cheng says hitting that point was very much a goal. "We need the freedom to do what we believe is right for the game, to experiment with that. And in order for us to do that, we need to feel like we have choice, options, and that we aren't bound to a single game or a publisher. Both of those things are important. Even if we were self-publishing and we only had one game, we would have to have that game hit. Otherwise our company is doomed. That would cause us to make the wrong decisions about the game, because we would make decisions that are less risky. We'd have to say, 'Maybe we shouldn't do that, because it might jeopardise our sales.' The stress level's much lower, now, with multiple projects. We get to experiment with a lot more things."

Future expansion is a possibility, but Cheng wants the size of the company to be driven by creative considerations. "At this point, I think we're in a pretty good spot," he says, and he's more comfortable than ever with what Klei's putting out. "From a design perspective, both *Mark Of The Ninja* and *Don't Starve* were built with a lot more intention about what kind of experience we wanted to create than our previous games.

I think our previous games were more about some snippet of an idea, but not fully explored." The unannounced projects, he believes, push a lot further into conscious exploration of a concept.

"When we first started, we had programming down. We know how to code. And now we know how to do some art as well. But our design is still kind of floppy. [With] *Ninja*, I feel like we understand the craft a lot better. As a whole, we understand the craft a lot better. Now I'm excited to push that craft. I'm excited to see what boundaries we can push around. I feel like now I know how to make a game." ■



Q&A

Kevin Forbes

Programmer/designer,
Don't Starve

Kevin Forbes, who heads up the small *Don't Starve* team, talks about responding to fan feedback during the game's beta, and why the community dictated that one of his darlings had to be almost entirely removed from the game.

Can you provide an example of feedback from the game's community that you've taken on board?

We had a character called Krampus, based on the kind of Austrian monster thing. And he would come along and steal your stuff if you had been naughty, and we really hyped this guy up. We have started to hype up our releases with videos and posters and things like that. This is one of the first ones we actually did to that extent. And we really hyped up this guy beforehand, [saying] that he was going to be awesome. He was going to totally change the way you played the game. Watch out for Krampus, he's going to catch you. And then he releases, [and] everyone hates him. He's, like, the worst thing ever in their mind. Probably because it felt like we were judging... Based upon what they said in the forum, it's like, "I'm just trying to survive. Why are you punishing me for killing a rabbit?" Well, I'm not... Krampus... whatever. So after a few tuning rounds of Krampus, we kind of came to the conclusion he was irredeemable in his current



state. That mechanism of kind of arbitrarily enforcing a morality on the player – even if it's like this one particular character, who's not even that bad when he shows up – it just didn't fit the spirit of the game, the doing whatever you can in order to survive. It was too selected. You could see the hand of the game designer too strongly, I think, in it.

So we actually [sent] him into nonexistence. You can still make him show up, but you have to try. I hope to bring him back, because he's a really cool-looking creature. He stole your stuff and wrecked your chest, which was also problematic: people don't like their stuff [being] touched. But I hope to bring him back in another way, as possibly some kind of wandering monster, triggerable thing or something. I think just getting rid of that punishment, naughtiness kind of aspect to it... It was something that the community rightfully told us was not something that they liked.

Did you get people excited for Krampus before you actually introduced him?

Yeah, which made it all the worse. I refer to him as my 'poochie' now. I really like him, but no one else does.

Any fan art?

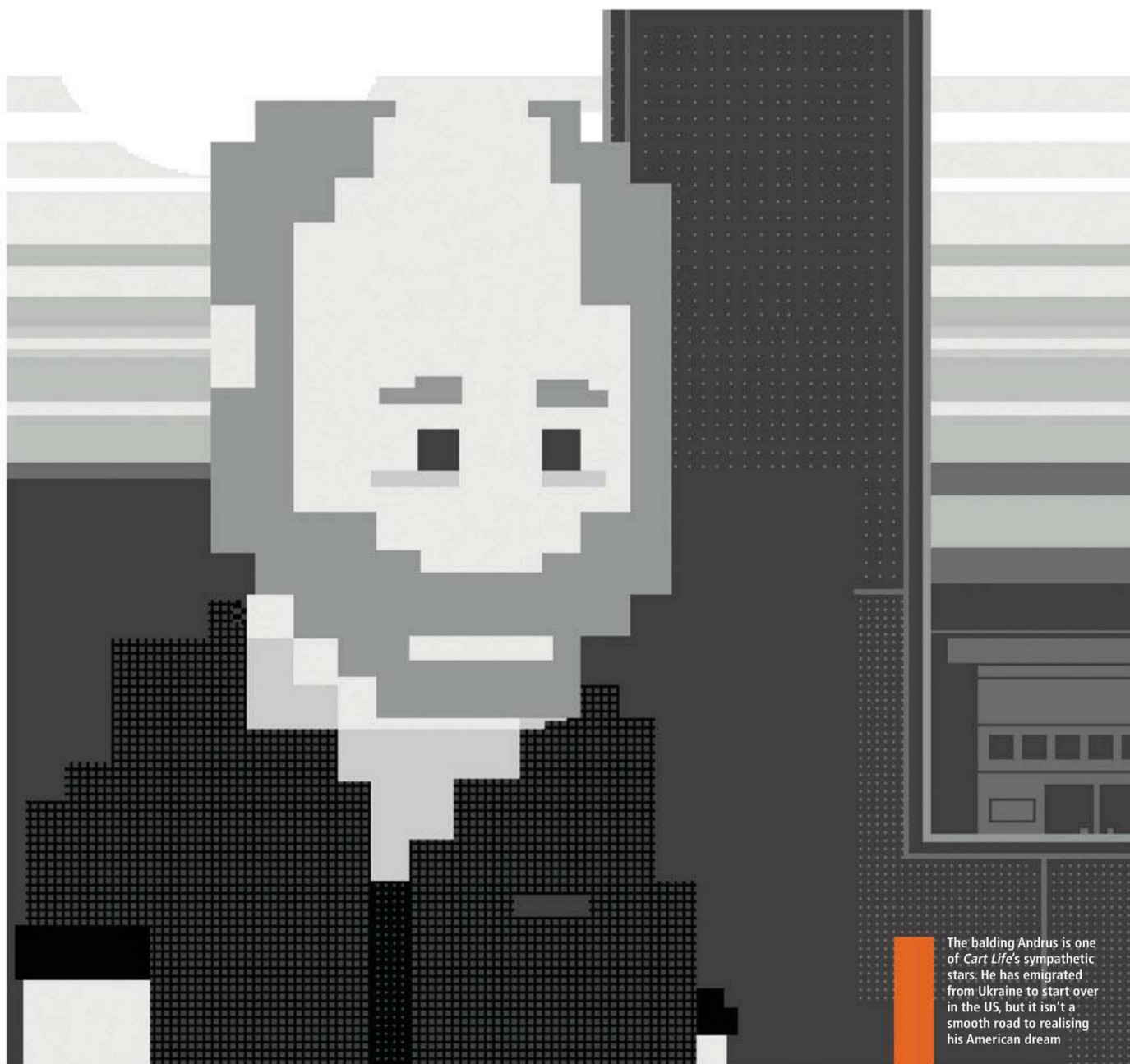
Of Krampus? There's been a bit. There was a comic, I remember, where all the player characters are kind of hanging out together doing their thing, and someone says, "Oh, where's Krampus?" And someone says, "Who's Krampus?" And then they show Krampus with this single tear going down his face, because nobody remembers him or cares about him. I understand your plight, Krampus.



Although hardly massive, Klei is split up into smaller teams. Some are at work on unannounced projects, while others support *MOTN* and *Don't Starve*

THE MAKING OF... Cart Life

How a monochrome, retro-fashioned game about street vendors came to win the Grand Prize at IGF 2013



The balding Andrus is one of *Cart Life*'s sympathetic stars. He has emigrated from Ukraine to start over in the US, but it isn't a smooth road to realising his American dream

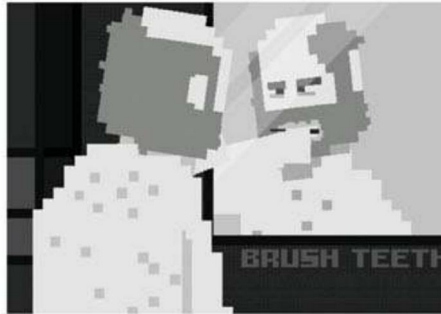
Format PC
Publisher Richard Hofmeier
Developer In-house
Origin US
Debut 2011

Cart Life – Richard Hofmeier's black-and-white game about managing a small business and all the will-sapping routine that entails – is autobiographical up to a point. Having grown up in Lolo, Montana, Hofmeier describes himself as "the worst kind of student", the kid who ignores his homework, gets bad grades and drops out of high school to work deadbeat jobs. "I wound up with a job as cameraman at a local television news station," he says, "then fell in love with the anchor, and we made our escape together, by night, to Seattle. She became a producer for a 24-hour cable news network, and I took a bunch of bad jobs at copy stores, textile factories, and bar kitchens."

It was while working these jobs that Hofmeier's creative interest in small-time toil was piqued. "I've spent many days making change with a cash register, bucking hay bales, collating documents, book binding, editing video, screen printing, transcribing audio, taping boxes, stacking huge piles of newspapers, washing dishes," he recalls. "I've had a lot of these jobs where they seem impossibly nuanced for the first day or two, but you just pick it up. Isn't that funny? How we're all so work-averse, but we can do anything with enough practice."

For Hofmeier, there's a certain beauty in the monotony of this sort of work, or at least in the way that humans approach and cope with monotony, and it's this appreciation that provided the theme for *Cart Life*. "Watch Chinese factory workers sort decks of cards and pack them – it's mind-blowing how beautiful this act can be. Listen to Ghanan postal workers cancel stamps; they're working the stamps on the envelopes like drums, and they're whistling – it's the sweetest music. Games are especially effective in cultivating very isolated realms of prehensile expertise. What's funny is how this prehensile expertise has infected so many game makers themselves, and many of them only want to make new games that utilise their own mastery of old systems. I wish I'd [owned] a copy of *Cart Life* when I was 11 or 12 years old, so I'd have black belts in areas like punctuality, detailed memorisation of disposable information, typing speed, and consumer math."

Hofmeier's path to game development was unorthodox. Appropriately enough, making games was an idea that came to him while he was working nights and creating art for yellow



Cart Life's all about the everyday, so it's no surprise it asks you to attend to such mundane tasks as cleaning your teeth

page ads in a phone-book bureau in Mount Vernon, Washington. "I just thought, 'If I could be anywhere else, doing anything else, I'd be at home making videogames,'" he says. "But I wanted to make games that wouldn't be like videogames at all. They'd have heart and be artistic, they'd be personal, you wouldn't have to kill anybody and there wouldn't be any points to collect or high scores to compete with. I was honestly that naïve – I thought I'd imagined something entirely new. It didn't take long to learn that these kinds of games have been made very well for almost 40 years. The tools to make them are free. Between documentation and message boards, all newcomer questions will be answered online. You don't have to get a college degree in computer science to write a piece of software."

Originally Hofmeier envisaged *Cart Life* (which won 2013's prestigious IGF award) as a comedy, a humorous exploration of normality viewed through the lens of minimum-wage jobs. "I thought it'd be funny. Street vendors are a useful subject for a

shit economy: they're small business entrepreneurs with their entire livelihoods flapping out there in the breeze. People starting over by daring. Everywhere I looked, there were people beginning new lives with nothing but maybe a handful of saved cash, a little savings, hopefully. From Seattle to Lolo, when newspapers shuttered, their reporters started their own blogs, started freelancing. Design firms closed up shop and their artists started freelancing, too. Restaurants closed and new food carts popped up. Lots of people [were] going broke doing this. Scary, funny shit."

While Hofmeier describes *Cart Life* as a "retail simulator", in truth the game has a wider scope and ambition than the label implies. As you follow

the stories of the three characters (two in the free version) as they attempt to survive an onslaught of misery, you spend time eating, drinking, sleeping, building friendships and nurturing family. Andrus is a recent immigrant who is selling newspapers to make the rent. Melanie, the protagonist of the second 'campaign', runs a coffee stand in the hope that it will prove to the authorities that she's responsible enough to look after her daughter.

With the idea in place, the novice designer gave himself an ambitious 30-day deadline. It would be three years before he uploaded the first build of the game. Drawing inspiration from Han Hoogerbrugge's *Modern Living* series of diminutive Flash animations, and Roark Moody, a Chicago street vendor who wrote poetry for *Streetwise* (a vendor magazine programme), Hofmeier began to piece the game together using Adventure Game Studio.

During development, Hofmeier took work where he could, and at times would have to set the game down for long periods of time. "When that happened, my own sensibilities changed, and when I got back to *Cart Life*, I'd lose time adjusting and readjusting," he explains. "But the hardest part, and it seems like this might be common to other game developers, was just releasing it. There's no real deadline, there was no real demand for the game, so I could just keep polishing it and fine-tuning it endlessly if I wanted to... Thankfully, my girlfriend couldn't take it any more."

Hofmeier's partner, Jenny, provided crucial support throughout *Cart Life's* development. Without her encouragement, the designer believes that he might have given up long before it was done. "Jenny will talk your ear off about how I tried to give up on *Cart Life* several times. There was one particular day when there was an overflow error in the scripting. I couldn't find it and couldn't see a way forward, so I just gave up and binned it. Jenny came home from work and found me like a Law & Order corpse discovery. I was just lying in bed with the crust of quit all over me. But she wouldn't let me do it, she wouldn't let me start a new one or pull up stakes until you could download cartlife.zip from the Internet. The maker of Adventure Game Studio, Chris Jones, helped me solve the error and even adjusted the new AGS build to accommodate my stupid overflow. Such hospitality."

Cart Life, like many of the indie darlings of recent years, employs an early-1990s pixel art aesthetic to tell its story – albeit lavishly presented

"I could just keep polishing it and fine-tuning it... Thankfully, my girlfriend couldn't take it any more"

and executed. But Hofmeier is eager to point out that he chose this route for reasons other than simply playing on people's nostalgia for the Super Nintendo era. "Nowadays, these techniques are seen as pure [nostalgia baiting] and that accusation might even be true in some cases," he says. "But illustrating game art in this style doesn't save time or effort in my experience, and is actually more time-consuming and meticulous than working in more programmatically assistable aesthetics like 3D. Think of spray painting or speaking instead of cross stitching to get your message understood. I went the pixel route because it remarks on the heritage of games in the way the rest of the game does. Isn't it funny, being nostalgic about a game that never got made? It's like a ghost who never lived."

As Hofmeier points out, *Cart Life* plays on the medium's heritage in its systems as well as its graphics. Despite the grimly realistic subject matter, time in the game is sped up, accelerated to near arcade rhythms. "It's configured for maximum yield of initial anxiety, which melts into a hurried mastery, but this part of games, the time and reaction part, might be the hardest question to answer," Hofmeier explains. "That little clock speed variable has been tweaked more than any other thing in the game. The world of these characters is very small. The length of their days needed to shrink before fitting the reduced scale of the whole machine. There has to be exactly enough time to make mistakes, but not enough time to fully correct them."

For Hofmeier, three years of development time provided him with ample space to make mistakes and, when the game finally launched, not all of them had been fixed either. "Version 1.0 wouldn't even run," he recalls. "There was a driver file missing in the download, so it was just unusable digital garbage. After that, it was pretty quiet for a while. Each time a new games writer remarked on it, I thought, 'Wow! This is amazing! Surely everybody's played it now.' I felt as though I was overstaying my welcome a little, but submitted to IndieCade anyway, somehow was accepted, and found a new audience there. Then there were the IGF nominations, Steam, and now the awards... It's unfathomable to me. I never thought I'd get fan mail, never thought I'd have to negotiate humble bragging, and I certainly never thought this game would result in anything worth bragging about."

Fittingly for a game that asks players to obsess over the minutiae of dollar-and-dime profits, Hofmeier has spent a considerable amount of time contemplating how much *Cart Life* cost him to

Q&A

Richard Hofmeier
Developer,
Cart Life



Post-release, you've been somewhat critical of the game. Why is that?

It's got problems. If I were a games writer, I might find some of *Cart Life*'s shortcuts too costly, the bugs too numerous and severe, the characters' relationships shallow and dishonest. I might think it were coy. I might think a game like *Cart Life* still needs to be made well, but would be hard to make.

What was the most impressive technical feat you achieved?

Cart Life was made with AGS, which has a small, vibrant community of users. Every year, they hold a little award ceremony in an IRC chat room to celebrate the year's games made with AGS. Although they generally show good judgment elsewhere, this group of people somehow decided to award *Cart Life* for Best Programming. Now, categorising the absurdity of this award as a technical achievement in itself is a semantic leap which I hope you'll take along with me, because I haven't achieved much and especially nothing technical.

Of what artistic achievement would you say you're most proud?

I'm proud of *Dys4ia*, even though I had nothing to do with it. I'm proud of *Kentucky Route Zero* and Emily Short's *Bee*. I'm proud of the fact that Molleindustria is kicking ass for a growing audience. I'm proud that [Ian] Bogost's *Simony* is profound and its detonation will even take place in a contemporary art museum.

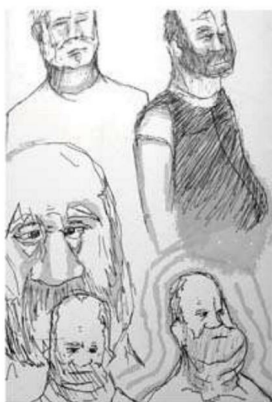
create. "I think about this all the time. I tried to calculate my hourly pay rate. The constituent materials are metaphorical, for fuck's sake, and the timescale is liquid... How do you calculate overhead? So I try to look at quantifiable stuff like volts used, on average, per day. I try to think about how much coffee I drank, how many chairs I went through and how much I paid for the mouse and monitor, and the bandwidth. How much money did I sacrifice by turning away paying jobs to do this thing for myself? Punitive damages could perhaps be assessed, due to future health care costs incurred by illnesses induced by stress and compounded by sleep deprivation. But none of those numbers seem to get along with each other; they speak different languages. No matter how I try to regard it as a loss or a diminishing return, and believe me I try, I just can't. It was fucking worth it, I must say. No matter how I look at it."

While the game's success has snowballed – proving that players agree with Hofmeier's assertion that it was worth it – not everybody was enamoured with *Cart Life* when they first saw it. Hofmeier illustrates the point with a story of his inability to shift copies at one demonstration event. "During my final week in Oregon, we presented a show about *Cart Life* at a little art gallery called Ink Thirsty. We served powdered doughnuts, liquorice, piña colodas and black coffee, so the refreshments were greyscale along with the art, and had the game running in an arcade cabinet, a projector screen, and a big TV in the back. An actual Oregon hot dog vendor sat in the huge display window with his silver push cart and bent down to hand hot dogs to the attendees. All you could see from the street were big, grey *Cart Life* posters and Randy's big pink butt in the window. The only copy of the game I sold went to a woman who said, 'I'm not a gamer, but my grandson would love this.' I feel bad for that kid if he got *Cart Life* for Christmas."

In subsequent months, the response to the game was overwhelmingly positive, however.

"Overhearing strangers at GDC as they spoke about *Cart Life* was surreal," Hofmeier says. "The emails and direct messages on Twitter and Facebook, message board threads, and beery discussions with this game's audience are all just unbelievably rewarding, and each time is kind of magic. It still astonishes me that games can communicate this way, I guess. It's blinking lights and noise, little scripts of instructions for a system, that's all. But someone wrote to tell me how, sometimes, while they're walking alone at night, they'll look at construction sites and feel amazed at how fast a city can change. A professor in Prague shared with me his students' thoughts on *Cart Life* after he assigned it to them as homework. Musicians want to submit music for future games or want me to help them make a music video, while *Cart Life* experts have scoured the game and want to submit bug reports."

If this sort of emotional response from players toward the game is surprising to Hofmeier, what exactly was his ambition, his hope for what players might take from his creation? "It was my hope that players wouldn't bail when they see it's harder than they might've thought," he says. "I hope they realise how much faith I have in them, and don't feel that I wanted to impose misery upon them. It's not health food, and I don't want to depress you. I believe in you, and want to show you why." ■



Cartoons and sketches are a recurring theme throughout Hofmeier's output, with his design notes for *Cart Life* covered in the game's characters. Even as scribbles, they convey a lot of personality



Doodle Jump

Cart Life was originally just sold through Hofmeier's own website (www.richardhofmeier.com/cartlife), and it's still available there today. The free version of the game offers two complete campaign experiences – those of newsstand proprietor Andrus and coffee seller Melanie – but doesn't include Vinny the bagel vendor's storyline. Meanwhile, \$5 gets you all three campaigns and a bonus minigame. But the word-of-mouth success the game's enjoyed inspired Hofmeier to take *Cart Life* to a broader audience, and he ultimately decided to contact Valve and apply to have the game included on its Steam download service. When filing the application, Hofmeier expressed his anxiety over Valve's response through a series of doodles. "I nervously drew cartoons all over my contract with Valve," he recalls. "But then they drew cartoons on it, too, when they sent it back with their signatures. I can't say exactly why, but this makes me happy."



Cart Life's world may be rendered in monochrome, but it's far from colourless. The drab palette certainly suits its themes, though



CREATE
GALLERY

THE ART OF...

Zeno Clash

Nothing is simple when you're
making a surreal firstperson brawler



This article's images appear courtesy of game art site Dead End Thrills (www.deadendthrills.com)

Zeno Clash's visually lush surroundings overshadow the tiny spaces that players get to explore in the game. Its Unreal-powered sequel will be more open, though

Q&A

Carlos Bordeu
Co-founder and lead designer,
ACE Team



A punk-fantasy firstperson brawler from tiny Chilean studio ACE Team, *Zeno Clash* was made in Source over id's *Doom 3* engine not because of the engines themselves, but because of Steam. Digital distribution would save the game from obscurity, but choosing technology for largely non-technical reasons meant the studio had to fight for its vision, which was inspired by White Dwarf illustrator John Blanche and Dutch master Hieronymus Bosch. Lead designer **Carlos Bordeu** explains.

In hindsight, are you glad you chose Source?

The engine limitations end up moulding whatever you're capable of doing. Let's say we [had] chosen to go forward with the *Doom 3* engine – I think the game would have been drastically different, [and] not only in terms of visuals. It would have played differently. The open areas would have been a major pain. But the environments aren't that big, so it would have been more specific levels that suffered in that case. We were pretty experimental [in] developing the gameplay of *Zeno Clash*. We had to test a lot of parameters, and once you're locked with your engine, you're pretty much testing what you can get away with.

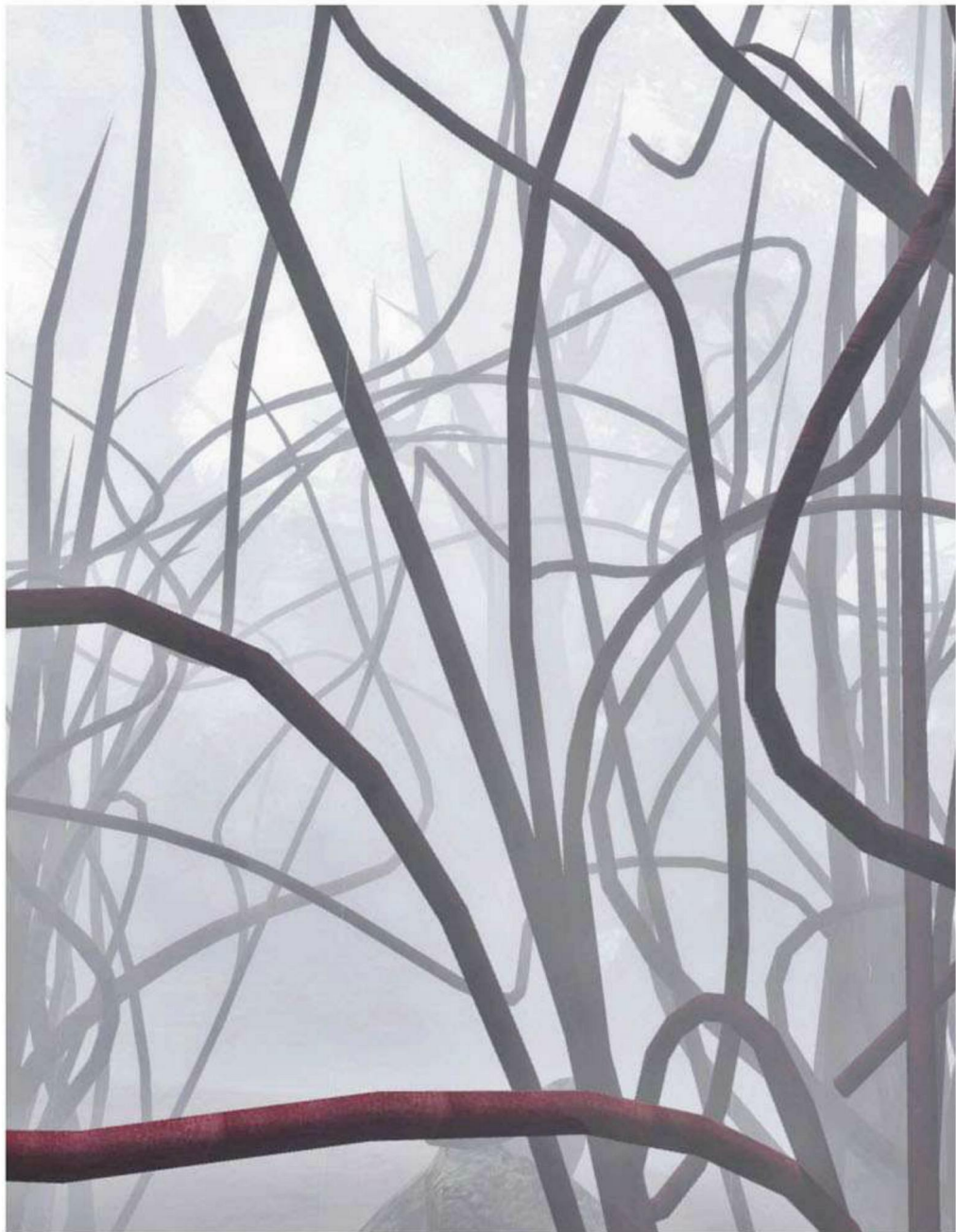
A good example of something that didn't work well in Source in the beginning was that all Source games rely so heavily on brush-based geometry. It's an excellent engine if you're doing more realistic types of buildings and stuff, but it's not that well suited to organic environments. We basically had to do everything with static meshes, and at the time, Source didn't support proper lightmapping on those meshes. No matter what we did, the game was looking pretty flat in terms of lighting. Eventually, we had to hack the static meshes so they had a UV channel where we could put in our own lightmaps baked in 3D Studio Max.

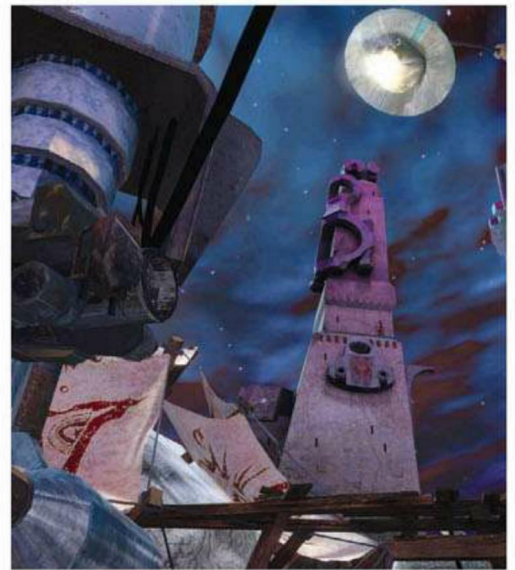
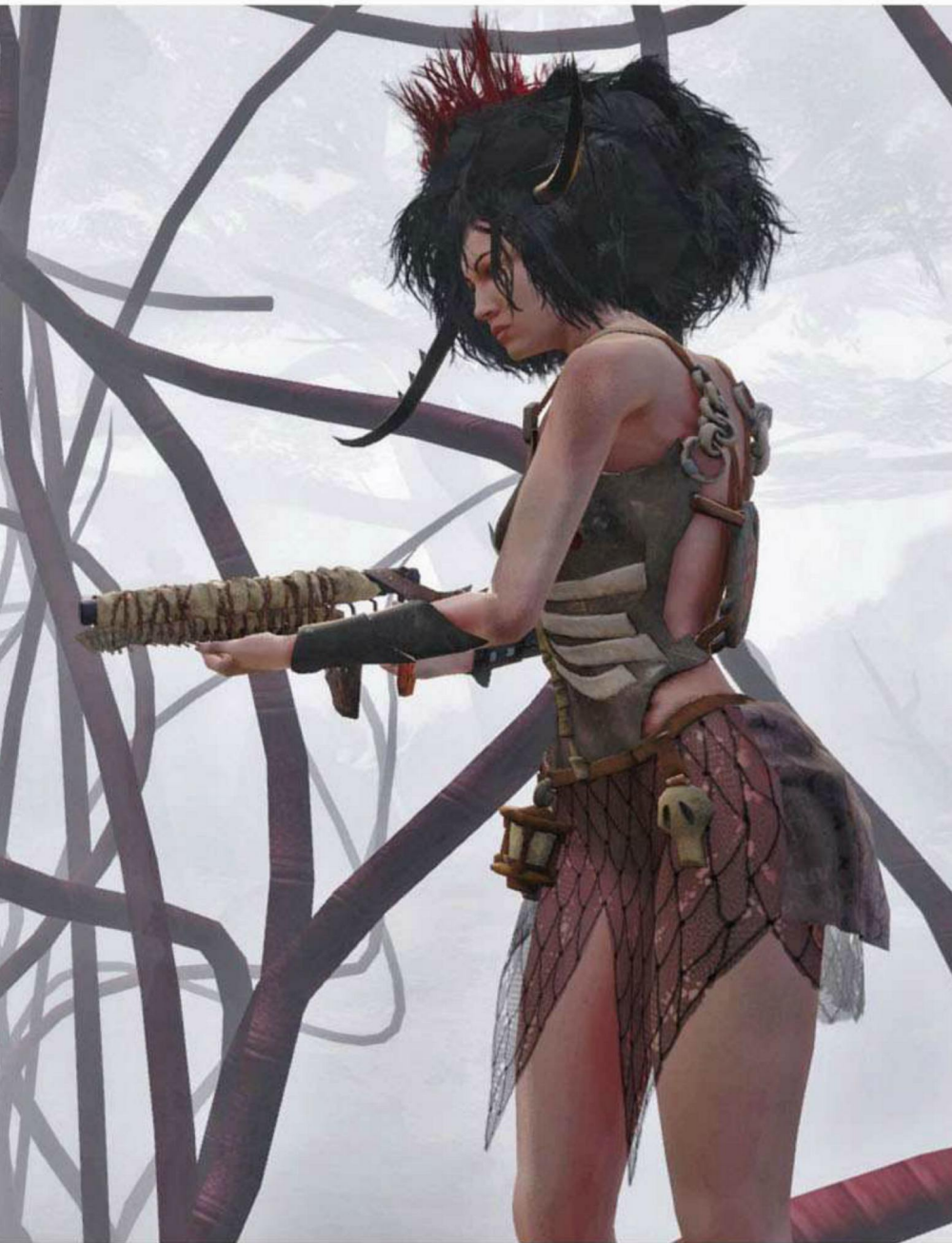
Wasn't that a problem for reusing those meshes across levels?

If I had a tree that was being lit in a specific way, I couldn't use the same tree: the lighting of the tree would have to be done twice in 3D Studio Max. So, yeah, I can't even possibly imagine doing something like that on the scale of *Zeno Clash II*. It meant we had to have almost all of the levels laid out in 3D Studio Max before we were able to get them into the game, because the lighting wasn't coming from Source. It's not like now, where we use Unreal and say, 'You know what, I'm going to move this tree a few metres in this direction.' In that case, we'd have to render the scene again.

Where do you make compromises in a game that required both close-up detail and the illusion of sprawling terrain?

The more we look at the game, I don't know





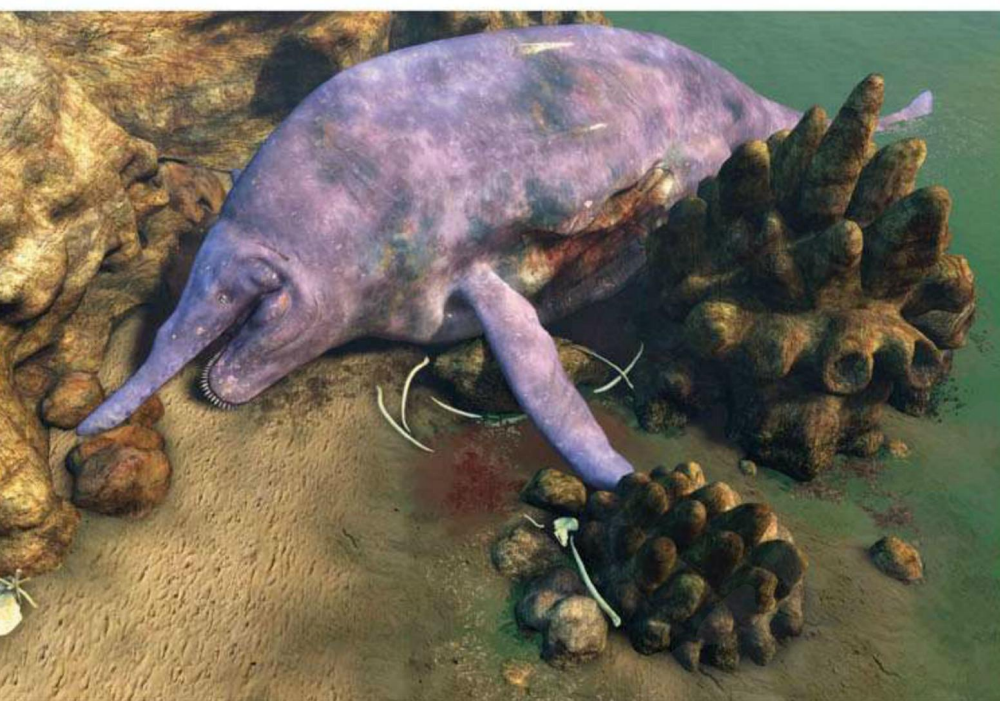
why we decided to make something so complicated [laughs]. Sometimes we really wonder if we didn't go too far. It was an issue in *Zeno Clash* and it continues to be an issue in *Zeno Clash II*. The biggest problem for us [was] that we didn't have enemies that just repeated over and over; each enemy is almost a character of its own. If you want to look specifically at some of the assets in *Zeno Clash* and isolate them, they're not fantastically modelled and they're not that detailed. It's a combination of elements that makes the whole picture come together. It's more the composition than the details. We're more interested in the novelty of the visuals than adding pores to the normal maps and everything.

Did art emerge from the story or vice versa?

The art led a lot of the story. We wanted to have something visually striking in an area and then we found the proper context. The main themes of the story were never compromised over specific art assets... but sometimes you put something in a level and everyone says, 'What's that?' We had a story for *Zenozoik* [the abandoned prototype that was reborn as *Zeno Clash*] that wasn't that memorable. When we started working with *Zeno Clash*, we still didn't have the story nailed down. We were producing two levels, and one of the levels was the bar level. At one end of the bar was a creature with a baby, and it looked like Father-Mother. And the reaction from many of the people looking at it was so interesting. Some people would say it looked awful, like a monster that was going to eat a baby, but others thought that maybe that was his father and he's taking care of this baby. So this interesting reaction is how Father-Mother was born as a character, and he eventually stole the story. It felt most natural. Why? Shifting the story into something related to family was really good for the game because, in a melee fighting game, nothing can be more personal than fighting your own brothers and sisters.

Did the look of the game change considerably from the *Zenozoik* prototype?

Yeah, it changed a lot. *Zenozoik* was actually pretty brown. Most people would see something more bland if they looked at it. I don't think we were studying art much then – John Blanche was the main inspiration and we weren't using Bosch at all. But there was this city and it did look kind of cool, with these straw houses and strange architecture. But it wasn't as intense as in *Zeno Clash*. ■



What Games Are



TADHG KELLY

Why games are not a storytelling medium

My friend and I are walking through the airport in San Francisco, talking about why I keep saying that games aren't a storytelling medium. He cites the example of the moment when his horse died in *Shadow Of The Colossus* and how that affected him. "Isn't that an example of powerful storytelling in games?" he asks.

And I say no. "Do you remember the names of the characters in the game?" I ask him. "Do you remember the whos, wherefores and whys that got you to the point of losing your horse? Does the game have memorable lines?" These are the typical signs of powerful storytelling, but none are present in his *Colossus* experience. But he does remember his emotional connection.

Emotional connection is part of the game experience. Protectiveness over Clementine in *The Walking Dead* or hatred of Sephiroth in *Final Fantasy VII* are perfectly valid feelings. So is belief in the fiction of the world inside the screen. The sensation that *World Of Goo* really is a world raises it far above many other casual puzzlers.

We are wired for thaumatic experiences like these, but thauma isn't drama. In drama, the audience needs to know the backstory because that builds tension up to the point of revelation. When Mercutio dies, he does so many scenes after you first meet him. His death reinforces the seriousness of the conflict between the Capulets and Montagues, and foreshadows the tale's end.

In thauma, such context rarely matters, and establishing it detracts from the experience. This often seems counterintuitive. How can you care about a character without knowing her story? How can you empathise with her situation if it's only passingly conveyed? The answer has a lot to do with assuming that Yorda and Mercutio are both characters in the same sense. They're not.

When I watch *The Walking Dead*, I am powerless to help the characters. Yet if I play *The Walking Dead*, I experience power rather than powerlessness. I feel my success and failure, protectiveness and frustration. I am in the moment, rather than observing the moment.

Watching the Governor and Rick tangle in the TV show is great drama. But in the game my relationship with Kenny evolves more like it would



The answer has a lot to do with assuming that Yorda and Mercutio are both characters in the same sense. They're not

in life. I see the high and low moments, but also the everyday. Sometimes Kenny is the object of my sympathy, but at others he's just an obstacle.

The difference between drama and thauma, between story- and game-native writing, is the difference between story and state. One is about building valid threads and manipulating attention toward a crescendo. The other is about interacting with a moving machine and making your own meaning. This is why I say that games are more like statues that move than stories you play.

A statue immortalises an instant. The most effective ones carry a sense of the moment before and the moment after. You get the sense that something either has happened or is about to, but the whos and wherefores don't matter. Game

writing is at its most faithful when it's like that. And it's at its worst when it starts telling stories, because it risks disengaging the player.

Having killed Kenny's son, you face a choice later to let Kenny kill a zombie child. The choice can be read in several ways. For me, it's one of the moments when the game blows me right out of the thaumaticism, because I become aware that the designers are reaching into the game. They might as well hold up a sign saying "Feel".

The choices and parameters of meaning that this moment offers are at odds with the state. It is presented as a way to redeem Kenny, yet to me as a player, that whole choice is badly framed. Kill a kid to feel better about the death of another kid? That's what it's like. Are you serious, Telltale?

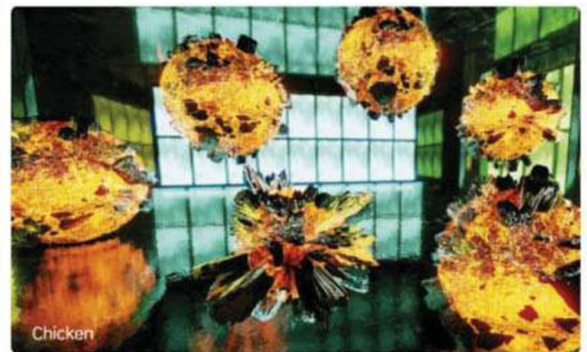
The Walking Dead is ultimately dislocating as an experience because it drifts into telling mode too often, manipulating or even outright cheating me on several occasions. As it does, it becomes far less of an experience than it initially promised. The problem with writing for a state is that has to remain impressionist, neutral and depictive. Like the statue, it's up to the player to infer what might have happened, or is about to. Clint Hocking calls this the question of how games mean.

How do games find ways to match functional action with believable metaphor? How do they keep the player both engaged and believing without seeming authored? How do games make the player feel weird in trying to win by doing questionable acts without alienating him?

Generally not by descending into story-style telling mode. Plotted games never achieve their intended effect and yet their proponents usually conclude that this is only because they haven't tried hard enough. This is because they want to be authors, filmmakers and poets.

The questions that I'm asking game writers are: can you write fiction without plot? How about delivering an impression of character without context? Can you trust that I may find meaning on my own? Can you convey your meaning through mechanic and image? Can you make me feel the game's tense situations without telling me I should? Can you be thaumatic?

Tadhg Kelly has worked in games, from tabletop to consoles, for nearly 20 years. Visit him at www.whatgamesare.com



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CLINT HOCKING

Death be not proud

Why is it that killing and death are such common events in games? Frequently, killing individuals or destroying units, vehicles, cities or structures is both an implicit and an explicit goal of a game. Similarly, death or destruction of a player's assets are commonly held as boundary conditions. This is strange when we consider that killing and death aren't common considerations for most people, and that cost-benefit analyses of the kill-or-be-killed sort are exceedingly rare. Why are we fixated on such morbid design concepts?

The optimist in me recognises that the struggle with death is among the most common themes in art, and that perhaps it's only natural that it be a prominent theme in games. Whether it's Goya's rebel defying the firing squad, Hemingway's great marlin fighting to survive, or the player accepting the loss of his best XCOM operative as a necessary sacrifice, humankind has tackled the theme of death in every medium, and games are no exception.

The pessimist in me wonders if we're simply lazy. Carmack and Romero hit upon a magical formula years ago when they discovered the pure joy we get from rapidly selecting a vector in 3D space and asking, via a click, for feedback from the computer as to how accurately we did so. Shooting simulated things is fun and, from a computational standpoint, it's pretty easy. But this dry analysis still does not answer the question.

Paintings, songs or novels about the themes of killing and death are no easier to create than those about other themes, and while these themes are common in other media, they are not nearly so dominant that you would be hard pressed to name works about other topics. Yet when we think of games that require the player to manipulate characters in 3D space, it is hard to name games that are not centrally about killing and death. Even *Journey* and *Portal* – two potential exceptions that leap to mind – can't escape them. *Journey* at the least strongly alludes to death, and *Portal* uses it as a boundary condition and as a whip to motivate progress.

The realist in me sees that in games, as in drama, conflict is central. In our normal lives, conflict is typically something we seek to avoid as



Perhaps the murderous orgy of violence in the average action game is the highest form of culture we can hope to deliver

much as possible, to minimise when it occurs, and to diffuse when it begins to escalate. As creatures who learn from experience, this is problematic, since it makes it hard for us to learn about (and be successful in) conflict should it become necessary.

In this sense, dramatic narrative and games are tools for helping us understand conflict and practising our conflict avoidance and resolution skills in situations more extreme than those in which we typically find ourselves. How do we get good at defusing a belligerent drunk on a bus, or at navigating the emotions involved in a divorce without repeatedly and constantly exposing ourselves to these unfortunate situations? The answer is that we exercise related skills by simulating high-intensity conflict in our minds.

The empathic relationships we have with fictional dramatic characters is one approach, and the exploration of actions and responses inside the magic circle of a game is another.

So if simulation of conflict within the safety of a magic circle is healthy for us, and if killing and death are the highest-intensity stakes, and if the actions of killing and the boundary conditions of death are comparatively easy to implement into simulations, then perhaps the murderous orgy of violence in your average action game is the highest form of culture we can hope to deliver.

Somehow that seems too easy to me. In dramatic narrative, themes are developed and revealed over time using the curves of rising action and reversals that escalate towards climaxes where death may define the boundary of the story. Games are different. They develop and reveal their themes through dynamic loops that are repeated in variants and recur throughout the course of play. Much like a musical fugue, games present their low-level themes hundreds of times during play, affording countless opportunities to explore and examine these themes from different perspectives and in a wide range of contexts.

I believe that the problem with overreliance on killing and death lies not in overexposure or desensitisation to violence, but rather with the simple fact that death as a boundary condition is a binary state, and that killing as a goal lacks nuance. The contest of too many games is simply to push a band of pixels across a line, depleting the opponent's health to zero before he does the same to you. There is rarely any simulation of the differences between being at 99 per cent health and 3 per cent health. There is rarely any consequence for killing. All of the richness of the theme has been stripped away. Shakespeare's bloodiest play, *Titus Andronicus*, has a minuscule number of deaths (a dozen or so) compared to even a tame action-adventure game, and almost all of the work is spent examining the motivations of the characters and the consequences of murderous actions and deaths. The typical FPS, by contrast, does not even have a health bar to keep track of consequences any more.

Clint Hocking lives in Seattle and works at Valve Software. He blogs at www.clicknothing.com



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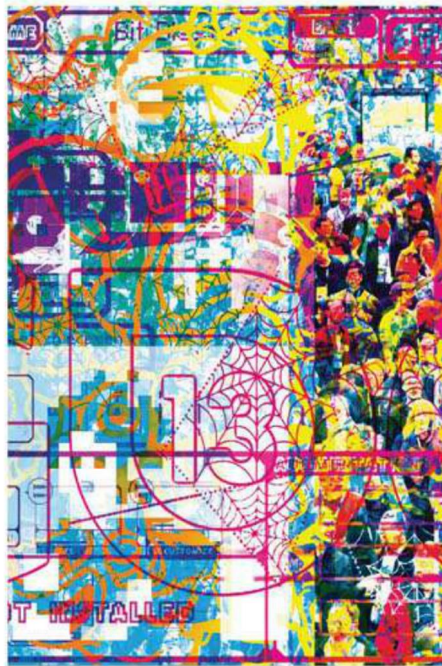
RANDY SMITH

Pictures of success

Coming out of GDC 2013, much of the discussion was about the more creative versus less creative portions of the game industry. It's not surprising the mainstream would be drawing fire as it enters the next console cycle, when graphical advancements are emphasised at the expense of any other flavour of innovation. I saw several variations of the same presentation slide: screenshots and magazine covers spanning numerous years but depicting the same 'tough guy pointing guns at everything in the world' gameplay, which was already tired a decade ago and which the newest titles are enthusiastically producing yet again. It's a persistent GDC topic, but this year perhaps it smacked a little harder given the rise of indie games, with titles that are risky, personal, inventive and fresh, and which gamers and developers alike increasingly appreciate.

Attending the Indie Summit reminded me of the main GDC conference 12 years ago. Indies have budgets of \$2 million or more. They speak about work-life balance, crunching, hustling for funding, team management: topics the mainstream was contemplating when I was working on *Thief: Deadly Shadows* back in 2001. Indies aren't exclusively a garage industry any more, and with larger risks and productions come larger rewards. The top percentage of indie successes enjoy profits in the millions, and with relatively small teams and no publishers dipping into the income, these developers can find themselves wealthy. Tiger Style enjoys a medium level of financial success, having earned \$1.3 million in total over our four years of existence. That's spread out over numerous collaborators who collect revenue share, which makes us comfortable but certainly not rich.

There's another type of success among the indie community, a frenzied enthusiasm reserved for the most beloved titles, such as *Spelunky* and *FTL*. They're gamers' games, but also developers' games, with deep systems and uncompromising designs. Tiger Style has never attained this level of praise, presumably in part because our goals are orthogonal. We set out to make sophisticated interactive concepts accessible to a casual audience – depth with a Trojan Horse immediacy and veneer of simplicity. And we're lucky to be



Indies aren't exclusively a garage industry any more, and with larger productions and risks come larger rewards

recognised by corresponding sources; both *Spider* and *Waking Mars* earned game of the year nods from Apple and TouchArcade. It's humbling, but rarely comes up among our GDC peers.

The major criticism about the 'tough guy with guns' thing is the emphasis on adolescent power fantasies. Although they're certainly more nuanced and imaginative, it's noteworthy that both *FTL* and *Spelunky* also feature violence at their centre. Do we give special recognition to games that eschew violence entirely? Yes. *Cart Life* is an adventure game with systemic elements about struggling to run a small business and being thwarted at every turn, and it won the IGF Grand Prize this year. *Journey* focuses on grandiose themes and emotional response, and unilaterally swept the

GDC Awards. Both of these games' artistic messages are evident, essentially running in the opposite direction of the 'tough guy with guns' touchstones. Since Tiger Style hopes to solicit the attention of regular gamers, our approach is to selectively adopt familiar conventions. *Waking Mars* often draws *Metroid* comparisons, and similarly *Spider* looks and plays like an action platformer. Our ambition has been to create innovative gameplay not outside the bounds of a traditional game structure, but within it. We've managed to create playable, highly systemic action games that feature no violence, a goal sometimes described as an antidote to a myopic lack of creativity in the mainstream. However, the way we do it is more understated than sexy. We haven't set out to make a game to set the world on fire, and our work doesn't generate the same kind of artistic acclaim as *Journey* and *Cart Life*.

Tiger Style's reviews reflect some of these trends I'm alluding to. *Waking Mars*, for example, has a Metacritic average of about 84, nine points lower than *Spider*, dragged down by some negative articles that seemed perhaps critical of our casual compatibility. However, the iOS user scores are an abnormally high 90 per cent. The written content is frequently glowing, and they rarely miss the point that it's a scientific game about creating rather than destroying life. At times it feels like our audience gets what we're doing better than our community does. Even though the latter espouses the high-minded ideals we are executing, our audience is digging the gameplay without explicitly being part of any movement.

There's lots of highly interpretable data in here, and it's impossible for me to have objectivity. But the position we're in is interesting and not one I feel badly about. I'm a huge supporter of every game I've mentioned and believe they are making important contributions to our medium. I'm grateful we don't struggle to survive and be heard the way some of our indie counterparts do. And I believe that progress is effected more as a tapestry of gradual advances – the highest-profile titles carry the burden of being our spokespeople, but being a contributor in any capacity is a privilege.

Randy Smith is the co-owner of Tiger Style. He has also compiled his favourite songs into a mix: www.bit.ly/VgA56n

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Word Play



JAMES LEACH

The art of communication

Yes, yes, I know: I listen too much. People have been telling me this for ages, but I've never really taken it on board until now. I don't mean in a real-life sense. (No, I do what you do: wait impatiently and play with my phone till I can talk again.) I mean in a professional sense.

Here's why I've come to this conclusion: I've recently got involved in some highly original projects at a gratifyingly early stage. Who doesn't love that part of a game's development when anything is possible, there are no bad ideas (apart from the really bad ones) and nobody cares about what's possible in the time frame? They can dare to be free and original. They can dare to dream. To dream, most often, about the best-selling game they're just about to start ripping off.

Asking writers to join in at this stage is no bad idea, either. You're not employing them for their word, erm, writing down skills at this point. It's for their imagination and their ideas. We all have those, but writers have more because they spend more time looking out of the window while waiting for Pointless to start. Writers also have the sense of a story, and an ability to see how satisfying structure and narrative cohesion could underpin these ideas.

But what do I do? I sit and listen. Oh, and write notes. Worth, you might say. Listening is an art. You're there to take on board knowledge, after all. And once you've done this, and had more coffee and one of those delicious German biscuits you're too mean to buy for yourself, you are sent back home to write it all up.

That's a pretty common model, but I'm starting to think I've been doing it all wrong. Perhaps instead of listening to people tell me what they think they want, I should be telling them what I think they want. Not in a confrontational way, just in an enthusiastic, shouty, I'm right and you're wrong way. Why would I do this? Well, firstly, over 20 years I've worked on dozens and dozens of games; secondly, there are no bad ideas; and thirdly, it's likely that if I feel this strongly, then let's face it – I am right and you're wrong.

Not too long ago, I was in a situation where I was told some game text needed to closely match a certain style seen on TV. I went off and



Perhaps instead of listening to people tell me what they think they want, I should be telling them what I think they want

did research, only to find – joy of joys – I slightly knew one of the writers whose style I was supposed to emulate. Careful not to breach my NDA, I emailed her a few questions. After a slightly annoying wait in which I suspected she was trying to remember who I was, she replied. Bless her. Armed with this insider knowledge, I got to work and boom – delivered the words. Only to be told at the very next meeting that they didn't think it sounded like the thing they wanted it to sound like. It needed to be more lively.

I took a lot of notes at that meeting and I did a lot of listening. This was, the new shoutier me argues, a mistake. I should have bellowed, "Listen! This is almost exactly like the TV thing we're basing it on! The difference is you're

reading cold printed words on a page, and comparing it in your minds to a hugely enthusiastic, possibly cocaine-driven performer shrieking in front of a camera." Furthermore, I should ideally have gone on to howl, "I know this because I spoke to someone who's actually written those scripts, and who said that you keep it short and factual, and let the presenter bring it to life. You never, never write it all excitedly to sound like them. Sounding like them is their job!" But if I had wailed that, I believe there would have been spit collecting at the corners of my mouth.

The trouble is, people don't like paying you to tell you that they're wrong, even if you do it politely. Or perhaps they do. I don't know, because up until now I've usually listened and taken notes and just kept my dark thoughts about their wrongness to myself. Then I've gone away and tried to fix it without confrontation. Yes, yes, passive-aggressive, I know. You don't have to leave Post-it notes around telling me that.

There is another way, though. I calmly but with massive self-assurance wait until this wrong person has stopped talking wrong at me, then explain in a voice like Morgan Freeman's (not an impression, you understand – that would be wrong) how I believe there is a better, more effective approach and it is certainly one to consider. This would contrast with the passion and excitement I observe when developers are telling me what they're planning, and it could go either way for me.

The best thing, though, is working with old colleagues who are also friends. I've been doing this recently as well, and it's so much fun I almost want to give up my loner misfit misanthropic life and throw myself back in the world of people. It's easy to say, 'No, that won't work because...' to friends. Even when you know the thing will work, but you feel they've had loads of good ideas and you need to put them in their place.

What have I learned? Either I get more vocal and raise issues at the risk of annoying a potential employer, or people wishing to hire me spend a few months taking me out for food, drinks, perhaps paintballing. Then we'll be friends and developing games becomes easy.

James Leach is a BAFTA Award-winning freelance writer who works on games and for ad agencies, TV, radio and online

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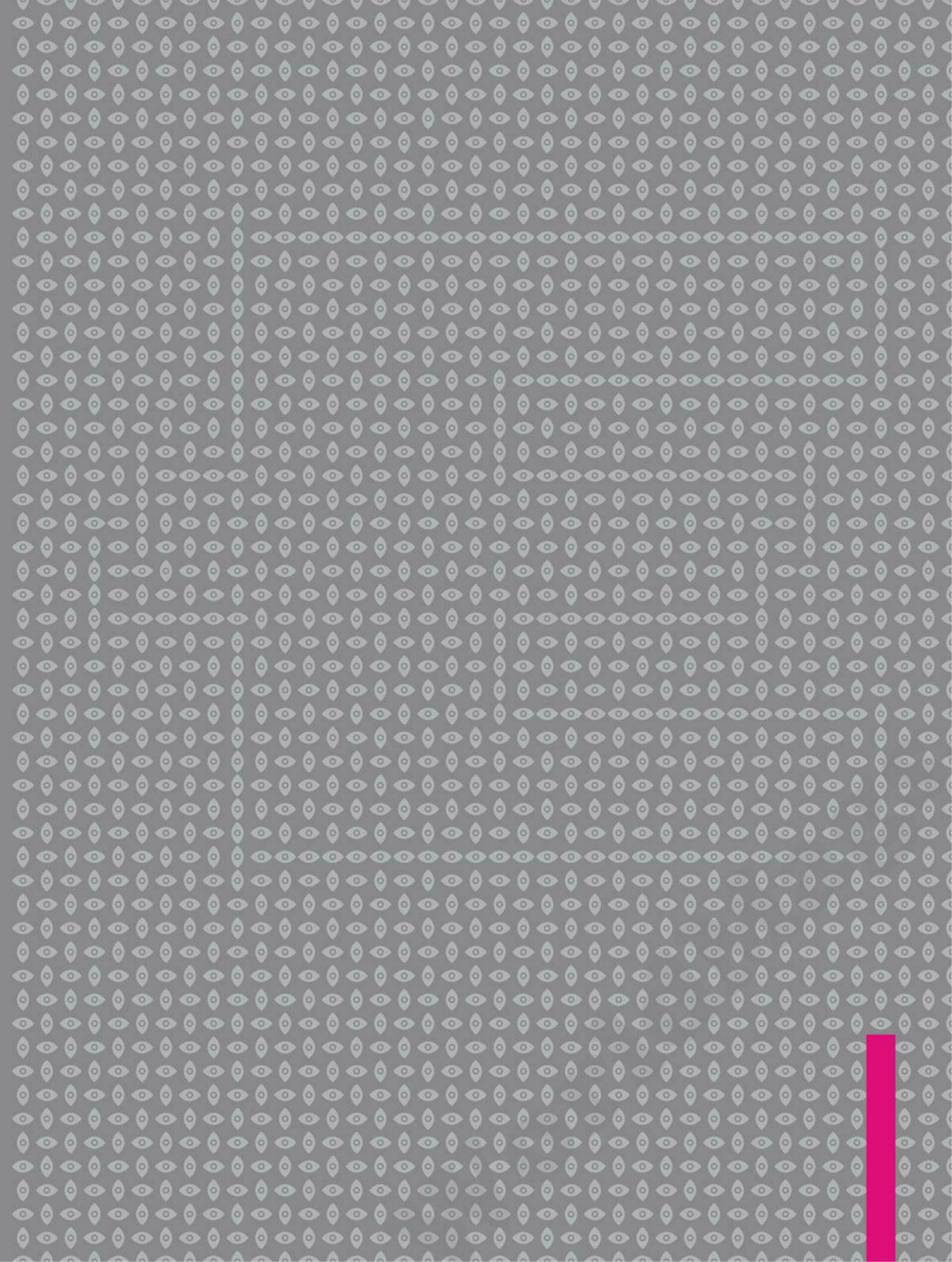
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June 6







On p72, we talk to the team at Oculus VR, whose \$300 Rift headset holds the key to a gaming revolution